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NATIONAL COMMUNICATIONS

NATIONAL COMMUNICATIONS FROM PARTIES INCLUDED IN ANNEX I TO THE CONVENTION

Part One: Elements of the second compilation and synthesis report */

Note by the secretariat

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* For technical reasons, Part Two of this note is issued separately as document FCCC/SB/1996/1/Add.1.

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* See document FCCC/SB/1996/1/Add.1.

I. INTRODUCTION

A. Mandate

1. The Conference of the Parties, at its first session (COP 1)*, adopted decision 2/CP.1 relating to the review of first communications from the Parties included in Annex I to the Convention (FCCC/CP/1995/7/Add.1), whereby, *inter alia*, it requested the secretariat to prepare, for consideration by the subsidiary bodies and by the Conference of the Parties at its second session, a second compilation and synthesis of first national communications,[1] taking into account available review reports of individual national communications.

2. At its first session the Subsidiary Body for Scientific and Technological Advice (SBSTA), in adopting its conclusions (FCCC/SBSTA/1995/3), *inter alia*, requested the secretariat to present the first elements of the synthesis report of in-depth reviews for consideration at its second session with a view to finalizing the report at a later session for transmission to COP 2.

B. Scope of the note

3. The purpose of the present note is twofold. First, it presents an **indicative outline** of the second compilation and synthesis report, indicating approaches that the secretariat intends to take in preparing this document and seeking, where appropriate, guidance from the subsidiary bodies. Secondly, it compiles, in a preliminary manner, some **numerical data** drawn from both national communications and in-depth reviews.

4. It is assumed that the synthesis report of in-depth reviews requested by the SBSTA will be a part of the second compilation and synthesis report requested by the COP. In preparing this report the secretariat intends to build upon the experience gained during the first compilation and synthesis and in-depth review process. It is envisaged that the length of the report will be about 50 pages.

5. Parties should be aware that issues arising from the review process have also been incorporated in other documents: a report on the guidelines for the preparation of first communications by Annex I Parties is issued as document FCCC/SBSTA/1996/3; a report on technology transfer is issued as document FCCC/SBI/1996/5; and a synthesized listing of policies and measures identified in the national communications of Annex I Parties is contained in document FCCC/AGBM/1995/6. As a limited number of in-depth review reports have been published to date, this note does not attempt to present new and additional

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* For decisions adopted by the Conference of the Parties at its first session, see document FCCC/CP/1995/7/Add.1.

[1] The term "national communication" includes communications from the regional economic integration organization included in Annex I to the Convention.

information made available to review teams and the secretariat but rather focuses on the types of issues that the secretariat intends to include in the second compilation and synthesis report to be submitted to subsidiary bodies at their third sessions.

6. At present 31 national communications (29 from Annex I Parties[2] plus Monaco and Liechtenstein[3]) have been submitted to the secretariat, and a number of these were subject to in-depth reviews (see FCCC/SB/1996/2). Supplementary information presented by the Parties during the in-depth reviews has constituted a valuable update on the documentation submitted by them so far (as reflected in documents A/AC.237/81 and Corr.1, FCCC/1995/INF. 4 and FCCC/CP/1995/INF.4/Corr.1) and is, to a certain extent, incorporated into parts of the present note, including tables containing national inventories and projections data. Substantial revisions and/or supplementary information included in these tables are indicated in the footnotes.

C. Possible action by the subsidiary bodies and Parties

7. The subsidiary bodies may take note of this document and provide guidance on the proposed outline and approaches to be taken during the second compilation and synthesis of first national communications. The SBSTA may also consider specific issues of a technical nature related to the second compilation and synthesis, while the SBI may consider specific issues of a political nature and provide guidance where required.

8. The SBSTA may recall that, according to decision 3/CP.1, Annex I Parties are requested to submit to the secretariat by 15 April 1996 national inventory data for the period 1990-1993 and, where available, for 1994. Given the limited time available to the secretariat to compile and synthesize such data before COP 2, the SBSTA may wish to encourage the Parties concerned to submit the data by that deadline, or before if possible.

9. The subsidiary bodies may consider whether any specific information in this preliminary outline would be relevant to the Ad Hoc Group on the Berlin Mandate (AGBM) and, if so, draw it to the attention of that body. (See also FCCC/AGBM/1995/2).

10. Parties for which data have been given in the tables contained in the addendum (in English only) to the present note (FCCC/SB/1996/1/Add.1) are invited to indicate to the secretariat any corrections that need to be made. It would be helpful if such corrections were received before 1 April 1996.

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[2] Including Belgium, whose instrument of ratification was received by the Depositary on 16 January 1996; Belgium will become a Party to the Convention on 15 April 1996.

[3] Liechtenstein and Monaco are not listed in Annex I to the Convention; Monaco has notified the Depositary that it intends to be bound by Article 4.2(a) and (b).

11. The SBSTA may wish to invite Parties to send their comments on technical issues related to the approach to the second compilation and synthesis indicated in this note by 1 April 1996.

II. NATIONAL CIRCUMSTANCES AND BASIC DATA

12. In-depth review visits completed so far have demonstrated that consideration of national circumstances appears to be particularly important for understanding of the general context of climate change policies. These circumstances often determine the range of approaches a Party implements or explores and the scope of its efforts to mitigate climate change.

13. The Parties in their national communications and in supplementary documentation have presented information on such issues as organization of climate change efforts at both the national level and local levels; responsibilities of various levels of government; status of implementation of national plans; general policy context and important political decisions related to abatement of greenhouse gas (GHG) emissions; rates of economic growth and level of gross domestic product (GDP); the particular situation of countries with economies in transition; economic structure; energy prices; institutional frameworks in the energy sector; energy profiles underlying current emissions and influencing policies and measures options; climatic and geographical conditions. These issues have also been a central theme for discussion during the in-depth review visits.

14. Detailed descriptions of national circumstances can be found in national communications and in-depth review reports. Nevertheless, it is envisaged that some examples of national circumstances and basic data should be included in the second compilation and synthesis report, as well as presenting, where appropriate, relevant information available from international sources such as the Intergovernmental Panel on Climate Change (IPCC), the Organisation for Economic Co-operation and Development (OECD) and the International Energy Agency (IEA).

III. INVENTORIES OF ANTHROPOGENIC EMISSIONS AND REMOVALS

15. Pursuant to Articles 4.1(a) and 12.1(a) of the Convention, reporting Parties communicated a 1990 national inventory of anthropogenic emissions by sources of greenhouse gases not controlled by the Montreal Protocol on Substances that Deplete the Ozone Layer. The secretariat has compiled the inventories data presented in national communications that were submitted by October 1994 in document A/AC.237/81 and those submitted by March 1995 in document FCCC/1995/INF.4.

16. In the course of the in-depth review process, which started in March 1995, additional and updated information on national inventories for the year 1990 has been communicated to

review teams and the secretariat by some reporting Parties, and more national communications have been submitted to the secretariat since March 1995, thus warranting incorporation of additional and updated data. The data are presented in tables A.1-A.8 (in English only), in the addendum to this note. These data will be further cross-checked and verified during the second compilation and synthesis and in the course of pending in-depth reviews. Nevertheless, it may be noted that the Parties whose data are presented in these tables account for more than 60 per cent of the estimated global CO_2 emissions from fossil fuel combustion in 1990.[4]

17. According to decision 3/CP.1, the Parties included in Annex I to the Convention are requested to submit to the secretariat national inventory data on emissions by sources and removals by sinks on an annual basis for the period 1990-1993 and, where available, for 1994 by 15 April 1996. It is envisaged, to the extent possible and subject to availability of resources and data requested, to compile inventory information for years subsequent to 1990 during the second compilation and synthesis of national communications. Such data may be used for the analysis of trends in GHG emissions and comparisons with information related to projections and effects of policies and measures. To put the inventory data into context, and with the aim of enhancing comparability and facilitating comparisons, the report on the second compilation and synthesis could present data on GHG (in particular CO_2) emissions per capita, and possibly per unit of output (recognizing problems related to the use of a specific currency to measure GDP) for 1990 and subsequent years where available.

18. In-depth reviews performed so far have indicated that additional efforts are needed to improve inventory data on land use change and forestry, in particular treatment of carbon stored in forests. The reviews have confirmed that estimates of changes in this sector are highly uncertain and often undergo substantial revisions. Furthermore, some methodological issues appear to be controversial, in particular those related to the effects of measures and of projections, and require consideration by the SBSTA, possibly assisted by a technical advisory panel, if established. During the second compilation and synthesis it is envisaged to highlight those issues. The secretariat therefore only provides tables on land use change and forestry inventories but does not provide projections for these categories.

19. A few Annex I Parties with economies in transition have, by virtue of Article 4.6, used a year other than 1990 as the base year for reporting in their national communications. Moreover, different methodologies (not always compatible with the default IPCC methodology) have sometimes been used for the base year chosen and for 1990, thus complicating the compilation and comparison of data among different Parties. The secretariat nevertheless envisages incorporating these data into the report on the second compilation and synthesis with explanatory notes where appropriate.

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[4] OECD/IEA, *1994, World Energy Outlook*, OECD, Paris, 1994, p. 90, and *1992 IPCC Supplement - Scientific Assessment of Climate Change*, WMO/UNEP, Geneva, 1992, p. 8.

20. The IPCC programme on inventory methodologies is continuing at least throughout 1997 (see FCCC/SBSTA/1996/6 on cooperation with the IPCC). This programme is making steady progress, *inter alia*, in resolving discrepancies with the CORINAIR methodology used by the ECE Convention on Long-Range Transboundary Air Pollution. However, it is not expected that the programme will be sufficiently advanced to have an impact on the preparation of the second compilation and synthesis.

IV. POLICIES AND MEASURES TO LIMIT ANTHROPOGENIC EMISSIONS AND TO PROTECT AND ENHANCE SINKS AND RESERVOIRS OF GREENHOUSE GASES

21. In-depth reviews have offered an opportunity to obtain additional information on policies and measures, which will enable the secretariat to undertake a more detailed analysis, building on the results of the first compilation and synthesis and on information submitted by Parties in their national communications as well as supplementary documentation made available to review teams. Its aim is to highlight the policies and measures that target major sources of greenhouse gas emissions and that, in the opinion of the reporting Parties and review teams, deserve closer attention from other Parties, or are either innovative or the most successful, or both. Since quantitative information on the effects of policies and measures is not abundant, this analysis is envisaged as a qualitative rather than a quantitative evaluation and assessment. In view of the major methodological problems related to this issue, the subsidiary bodies, in particular the Subsidiary Body for Implementation (SBI), may wish to return to it at later sessions.

22. It is envisaged to provide in the second compilation and synthesis report some examples of specific measures and policy options implemented by Parties, mentioning their names, where appropriate, in accordance with decision 2/CP.1. These examples could cover, *inter alia*, types of measures and policy options such as taxation, regulations, standards, and voluntary agreements. They are intended to illustrate the approaches taken by individual Parties without making judgements on their comparative merits or applicability to other Parties, and bearing in mind the facilitative and non-confrontational nature of the review process.

V. PROJECTIONS AND EFFECTS OF POLICIES AND MEASURES

23. During the in-depth reviews supplementary or updated information on projections and effects of measures was made available to review teams by some Parties. Tables B.1-B.5 (in English only) in the addendum to this note contain projections data for 31 Parties whose national communications were received by 18 January 1996, and which take account of the supplementary information mentioned above. As these updates are not necessarily compatible with the original projections, the attached tables sometimes indicate the directions of the revisions rather than present new figures, and provide short explanatory notes. To be

consistent with the different policy approaches adopted by Parties, CO_2 projections for 2000 are compared with both actual 1990 inventory figures and 1990 figures adjusted for temperature anomalies or electricity imports or other statistical adjustments.

24. Discussions of approaches, assumptions and uncertainty levels have been a major part of the in-depth reviews, allowing a more substantial analysis of these issues to be made than during the first compilation and synthesis. This is also true for projections beyond 2000 and sectoral developments. However, as information on these issues is often scattered and not comparable among Parties, it is not reflected in the tables, nor is it envisaged to include this information in the second compilation and synthesis report.

25. A number of issues related to presentation of information on projections arose during the first compilation and synthesis and at a later stage in both in-depth reviews and direct comments from Parties. In considering the projections and effects of policies and measures the secretariat envisages highlighting the issues that triggered reactions from interested Parties.

26. One such issue was the treatment by three reporting Parties of temperature adjustments and electricity import/export corrections for the base year 1990; another was the use of global warming potentials. It is envisaged that such issues will be addressed in the report and summary results presented in tabular form, as in the first review of information communicated by each Party included in Annex I to the Convention (see A/AC.237/81).

27. A major unresolved problem is how to present projections of CO_2 emissions in the land use change and forestry sector and anthropogenic emissions and removals of all GHGs. The presentation in document A/AC.237/81 (table 2) based on an approach adopted by some Parties led to comments from other Parties, either during the in-depth reviews or submitted directly to the secretariat. It was argued that this presentation could be misleading, for it focuses mainly on annual variations in the increment, while the long-term changes in the carbon reservoirs are not reflected explicitly. The secretariat is aware of this problem, which it intends to address in the second compilation and synthesis report. The subsidiary bodies may invite Parties to submit proposals aimed at improving the presentation of information on projections and effects of measures before April 1996 and to return to the issue at a later session.

VI. FINANCIAL ASSISTANCE

28. Article 12.3 of the Convention requires each developed country Party and each other developed Party included in Annex II to submit in its national communication information containing details of measures taken in accordance with Article 4, paragraphs 3, 4 and 5, dealing with the provision of new and additional financial resources to developing countries. In-depth reviews visits completed so far have covered a majority of Parties included in Annex II, thus allowing for the collection and updating of information on amounts and types of financial assistance to supplement data already contained in national communications. The

secretariat intends to consider analysing and compiling information submitted by the Parties as well as information available from international sources, such as the Global Environment Facility (GEF) and the Organisation for Economic Co-operation and Development/ Development Assistance Committee (OECD/DAC).

VII. TRANSFER OF TECHNOLOGY

29. It is envisaged to present in the second compilation and synthesis report a general overview of activities related to transfer of technology, taking account of supplementary information made available by Parties during the in-depth reviews. Substantive issues related to transfer of technology are considered in detail in document FCCC/SBI/1996/5.

VIII. OTHER ISSUES

30. It is envisaged that the following issues will be separate sections in the second compilation and synthesis report and will generally follow the same approach as in document A/AC.237/81:

Implementation of other commitments and related issues:

- Expected impacts of climate change, vulnerability assessment and adaptation
- Research and systematic observation
- Education, training and public awareness
- Integration of climate change considerations into policies and the identification and review of policies and measures leading to greater levels of emissions

The review and synthesis process

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NATIONAL COMMUNICATIONS FROM PARTIES INCLUDED IN ANNEX I TO THE CONVENTION

Addendum

Part Two: Tables of inventories of anthrogenic emissions and removals in 1990 and projected anthropogenic emissions in 2000

Note by the secretariat

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INVENTORIES OF ANTHROPOGENIC EMISSIONS AND REMOVALS IN 1990
Tables A.1 - A.8

PROJECTED ANTHROPOGENIC EMISSIONS IN 2000
Tables B.1 - B.5

General notes to the tables

Data on inventories of emissions and removals as well as data on projections are included in the tables below. The purpose of these tables is to present in a consistent and comparable fashion inventory data from all the national communications received by the secretariat. However, it should be borne in mind that part of the information taken from national communications received since the first compilation and synthesis and presented in these tables is provisional and has not been subject to a technical analysis and review by experts. The data provided by the Parties will be further reviewed and analysed for incorporation in the second compilation and synthesis of national communications from Annex I Parties to be prepared for the Conference of the Parties at its second session.

In some cases, the figures presented do not correspond to those in national communications as originally submitted. To the extent possible, such cases are explained in the notes to the tables, with the exception of differences resulting from rounding due to data input and processing. Differences have arisen from corrections of typographical and calculation errors or omissions, the incorporation of data communicated in the course of in-depth reviews and the presentation (for consistency and comparability) of subtotals and totals not provided in the communications.

Some of the differences are due to the fact that, in striving to ensure consistency and comparability of results, the secretariat has had to convert some of the estimates reported so that they concur with the guidelines for preparation of national communications. Such changes include subtraction of emissions from bunker fuels and "electricity import corrections".

The tables comprise estimates provided by 28 Parties included in Annex I to the Convention and Belgium that is to become a Party on 15 April 1996, plus estimates provided by Liechtenstein and Monaco.

Explanatory notes to the tables

Blanks in the tables signify either an absence of quantitative information or the fact that only qualitative information was provided. The secretariat has chosen to leave the spaces blank in order not to complicate the reading of the tables. The figure "zero" appears in the tables only when reported as such by the Parties.

Two dots (..) indicate that data were not estimated or reported in the national communication.
Two hyphens (--) indicate that the item is not applicable.
A minus sign (-) indicates a deficit or decrease, except as indicated.
A plus sign (+) indicates an increase.
A full stop (.) is used to indicate decimals.
(~) before data indicates an approximation.
($\leq$) indicates that the actual data are equal to or less than the data provided.
($\geq$) indicates that the actual data are equal to or greater than the data provided.

References to "guidelines" are to document A/AC.237/55, annex I, decision 9/2, annex to this decison entitled "Guidelines for the preparation of first communications by Annex I Parties". Text in *italics* under the tables indicates major source/sink categories from the IPCC Guidelines.

The following chemical symbols have been used:

CF_4	Tetrafluoromethane
CFCs	Chlorofluorocarbons
C_2F_6	Hexafluoroethane
CH_4	Methane
CO	Carbon monoxide
CO_2	Carbon dioxide
HCFCs	Hydrochlorofluorocarbons
HFCs	Hydrofluorocarbons
N_2O	Nitrous oxide
NO_x	Nitrogen oxides
NMVOCs	Non-methane volatile organic compounds
PFCs	Perfluorocarbons
SF_6	Sulphur hexafluoride
VOCs	Volatile organic compounds

The following weights have been used:

Gg	Gigagrams (10^9 grams)

Table A.1 **Anthropogenic CO_2 emissions, excluding land use change and forestry, 1990 (Gigagrams and percentage of total by Party)** **(Provisional)**

	Energy				Industrial processes		Waste		Other**		Total
	Fuel combustion*		Fugitive fuel emissions								
	(Gg)	%	(Gg)	%	(Gg)	%	(Gg)	%	(Gg)	%	(Gg)
Australia	277,987	96.2	4,086	1.4	6,892	2.4					288,965[a]
Austria	57,100	96.5			2,100[b]	3.5					59,200
Belgium	106,298	92.9			7,198	6.3	914	0.8			114,410
Canada	418,947	91.6	15,756	3.4	21,224	4.6	1,514	0.3			457,441
Czech Republic[c]	157,364	94.9	0	0.0	8,428	5.1					165,792[a]
Denmark	50,934	97.8			1,166	2.2					52,100
Estonia[d]	37,170	98.0			627	1.7			150	0.4	37,947[a]
Finland	52,600	97.6	100	0.2	1,200	2.2					53,900
France	349,660	95.4	181	0.0	16,695	4.6	[e]		[f]		366,536[a]
Germany[c]	987,000	97.2	0	0.0	28,000	2.8					1,015,000
Greece	76,210	92.8			5,890	7.2			[g]		82,100
Hungary	68,105[h]	95.0			3,568[i]	5.0					71,673[j]
Ireland	29,038	94.5	0	0.0	1,627	5.3	54	0.2			30,719
Italy	401,350	93.6			27,591	6.4	[k]		0	0.0	428,941[a]
Japan	1,075,360	91.6			53,000	4.5	45,000[l]	3.8			1,173,360
Latvia	22,606	98.4			371	1.6					22,976
Liechtenstein[m]											208
Monaco							71	100.0			71
Netherlands	164,800	98.3			1,900	1.1	900	0.5			167,600
New Zealand	22,769	89.2	271	1.1	2,490	9.8					25,530[a]
Norway	26,967	75.9	1,694	4.8	6,494	18.3	81[n]	0.2	297	0.8	35,533
Poland[o]	[p]		[q]		[r]		[s]				414,930
Portugal	38,686	91.8			3,462	8.2					42,148
Romania[m]											171,103[t]
Russian Federation[m]	2,327,939[u]	97.5	18,330	0.8	40,326	1.7					2,386,595
Slovak Republic	55,033	94.4			2,775	4.8	470	0.8			58,278
Spain[c]	209,012	84.3	413	0.2	17,696	7.1	2,159[l]	0.9	18,725	7.6	248,005[a]
Sweden	55,122	90.0	53	0.1	4,972	8.1	275[n]	0.4	834[v]	1.4	61,256[a]
Switzerland	40,800	93.6	0	0.0	2,100	4.8	700	1.6	0	0.0	43,600[a]
UK[c]	563,401	97.6	5,677	1.0	7,421[w]	1.3	512[l]	0.1			577,012
USA	4,895,432	98.8	6,560	0.1	55,030[x]	1.1					4,957,022[a]
Total[y]	12,567,690	96.5	53,121	0.4	330,243	2.5	52,650	0.4	20,006	0.2	13,609,951

*See notes to Table A.2. **Includes source/sink categories *solvent use* and *agriculture*. In the light of the different ways of reporting used by Parties, emissions from *land use change and forestry* were excluded from the table for comparison and consistency purposes. Emission estimates were provided for the following source/sink categories for which no IPCC default methods exist: production of iron and steel, aluminium, other non-ferrous metals, ammonia, soda ash, lime, glass, fertilizer, other organic chemicals and CO_2 manufacture, limestone use and flue gas desulphurization and *solvent use*.

Notes

a) These Parties originally included *land use change and forestry* in their total CO_2 estimates.
b) Emissions from iron and steel were included in *energy* under energy and transformation industries.
c) Revised/additional data were provided during the in-depth review.
d) Party provided estimates for an additional category, wetlands, which was not included in this table.
e) Estimate of 8,038 Gg provided for emissions from waste but not included in national total.
f) Estimate of 4 Gg provided for emissions from agricultural waste burning but not included in national total.
g) Estimate of 2,700 Gg provided for emissions from agricultural waste burning but not included in national total.
h) Emissions for base period (1986-1987): 80,089 Gg.
i) Emissions for base period (1986-1987): 3,587 Gg
j) Total emissions for base period (1986-1987): 83,676 Gg.
k) Estimate of 7,282 Gg provided for emissions from waste but not included in national total.
l) Parties deviated from IPCC Guidelines by including CO_2 emissions from organic waste combustion, aerobic, organic carbon in landfills, dumps, sludge or compost facilities in national total.
m) Party did not provide inventory data according to IPCC reporting format.
n) No details provided as to whether CO_2 emissions from organic waste combustion, aerobic, organic carbon in landfills, dumps, sludge or compost facilities were included in national total.
o) The secretariat chose to report the emissions total only, as the Party used the CORINAIR reporting format in providing its 1990 inventory data.
p) Emissions for base year (1988): 483,700 Gg.
q) Emissions for base year (1988): 10,650 (10,450 - 10,850) Gg.
r) Emissions for base year (1988): 8,480 Gg.
s) Emissions for base year (1988): 1,750 (1,200 - 2,300) Gg.
t) The secretariat calculated estimates using per capita emission and population figures provided by the Party, as well as emissions for base year (1989): 198,247 Gg.
u) Party included bunker fuel emissions in its national total.
v) Party deviated from IPCC Guidelines by including biogenic emissions from agriculture in national total.
w) Emissions from iron and steel were included in *energy* under industry (fuel combustion).
x) Non-ferrous emissions included under non-fuel industrial uses in *energy*.
y) The percentages of the total accounted for by each category have been calculated on the basis of the overall total with the exclusion of Liechtenstein, Poland and Romania (13,023,710 Gg) since data for the individual categories for these Parties were not included in the table.

Table A.2 Anthropogenic CO_2 emissions from fuel combustion, 1990 (Gigagrams and percentage of total by Party) **(Provisional)**

	Energy and transformation industries		Industry		Residential, commercial/institutional		Transport		Other		Total
	(Gg)	%	(Gg)	%	(Gg)	%	(Gg)	%	(Gg)	%	(Gg)
Australia	160,053	57.6	32,568	11.7	8,351	3.0	68,358[a]	24.6	8,657	3.1	277,987
Austria	13,700[b]	24.0	12,300[b]	21.5	12,100	21.2	16,200	28.4	2,800	4.9	57,100
Belgium	21,795	20.5	25,458	23.9	26,519	24.9	20,567	19.3	11,959	11.3	106,298
Canada	137,776	32.9	71,960	17.2	66,780	15.9	139,300	33.3	3,131	0.7	418,947
Czech Republic[e]	92,642	58.9	21,996	14.0	30,441	19.3	7,401	4.7	4,884	3.1	157,364
Denmark	26,435[c]	51.9	5,964	11.7	6,487	12.7	11,241	22.1	807	1.6	50,934
Estonia	28,450	76.5	2,845	7.7	3,224	8.7	2,651	7.1			37,170
Finland	19,500[d]	37.1	13,700	26.0	5,800	11.0	11,500	21.9	2,100	4.0	52,600
France	60,813	17.4	71,056	20.3	81,845	23.4	128,124	36.6	7,822	2.2	349,660
Germany[e]	440,000[f]	44.6	170,000	17.2	198,000	20.1	159,000	16.1	21,000	2.1	987,000
Greece	43,780	57.4	9,700	12.7	8,260[g]	10.8	14,460	19.0			76,210
Hungary	29,746[h]	43.7	7,893[h]	11.6	18,415[h]	27.0	8,208[k]	12.1	2,462[h]	3.6	68,105[m]
Ireland	10,863	37.4	5,431	18.7	7,199	24.8	4,885	16.8	660	2.3	29,038
Italy	138,291	34.5	91,345	22.8	67,473	16.8	95,624	23.8	8,617	2.1	401,350
Japan	387,692[n]	36.1	296,167	27.5	126,201	11.7	206,800	19.2	58,500[n]	5.4	1,075,360
Latvia	8,309	36.8	2,680	11.9	3,140	13.9	5,661	25.0	2,815	12.5	22,606
Liechtenstein[v]											
Monaco											
Netherlands	51,400[p]	31.2	33,400	20.3	28,700	17.4	26,900	16.3	24,400[q]	14.8	164,800
New Zealand	6,832	30.0	4,334	19.0	1,699	7.5	8,731	38.3	1,173	5.2	22,769
Norway	7,481	27.7	3,023	11.2	2,357	8.7	13,249	49.1	857	3.2	26,967[r]
Poland[s]									[t]		[u]
Portugal	19,386	50.1	6,079	15.7	1,936	5.0	9,947	25.7	1,338	3.5	38,686
Romania[v]											
Russian Federation[v]	1,015,684	43.6	458,855	19.7			853,401[w]	36.7			2,327,939
Slovak Republic[e]	15,679	28.5	21,155	38.4	12,537	22.8	3,628	6.6	2,034	3.7	55,033
Spain[e]	76,783	36.7	46,403	22.2	20,340	9.7	60,218	28.8	5,269	2.5	209,012
Sweden	7,041	12.8	13,446	24.4	11,543[g]	20.9	23,092	41.9			55,122
Switzerland[f]	1,300	3.2	5,700	14.0	18,100[g]	44.4	15,300[y]	37.5	400	1.0	40,800
UK[e]	231,277	41.1	96,673	17.2	109,149	19.4	119,247	21.2	7,056	1.3	563,401
USA	1,742,471	35.6	1,065,905	21.8	551,002	11.3	1,502,626	30.7	33,428[z]	0.7	4,895,432
Total	4,795,179	38.2	2,596,036	20.7	1,427,598	11.4	3,536,319	28.1	212,169	1.7	12,567,690

Notes

a) Military transport is included under "other" *energy* (fuel combustion).
b) Includes waste incineration for the production of energy, without details as to whether biogenic CO_2 emissions were included.
c) The electricity import correction of 6253 Gg was subtracted by the secretariat from the subtotal given in the communication.
d) Emissions equivalent to electricity imports of 11,000 Gg were also provided.
e) Revised/additional data were provided during the in-depth review.
f) Includes waste incineration for the production of energy.
g) Includes emissions from agriculture and forestry category in *energy*.
h) Emissions for base period (1985-1987): 36,928 Gg.
i) Emissions for base period (1985-1987): 10,893 Gg.
j) Emissions for base period (1985-1987): 20,042 Gg.
k) Emissions for base period (1985-1987): 7,741 Gg.
l) Emissions for base period (1985-1987): 4,485 Gg.
m) Total emissions from fuel combustion for base period (1985-1987): 80,089 Gg.
n) Estimates provided during the review include statistical difference (9,000 Gg.)
o) Party deviated from IPCC Guidelines by including emissions from biomass burned for energy in *energy* total because biomass material used is imported.
p) Party also provided temperature adjusted total energy emissions of 171,200 Gg which are not included in this table.
q) Includes actual emissions from agriculture and forestry (8,600 Gg) as well as feedstocks (14,800 Gg) and statistical difference (1,000 Gg).
r) Figure corrected during the in-depth review.
s) Party provided 1990 inventory data using the CORINAIR reporting format.
t) Emissions for base year (1988): 34,100 Gg.
u) Emissions for base year (1988): 462,820 Gg.
v) Party did not provide inventory data according to the IPCC reporting format.
w) Includes emissions from residential, commercial/institutional and other.
x) Emissions include oil and gas production and storage.
y) Emissions from bunker fuels (2,100 Gg) have been subtracted by the secretariat from the subtotal given in the communication.
z) Emissions from agriculture and forestry category in *energy* were not estimated; emissions from *energy* in the Party's territories are included.

Figure A.1. Distribution of CO_2 emissions by sub-source category

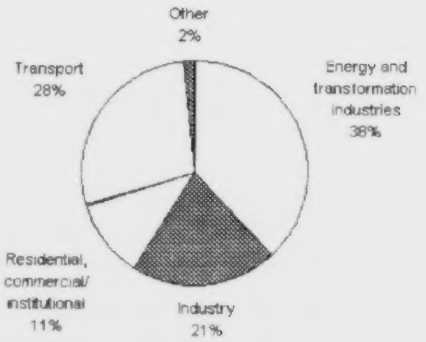


Table A.3 Anthropogenic emissions and removals from land use change and forestry and impact on total CO_2 emissions, 1990 (Gigagrams) **(Provisional)**

	Emissions	Removals	Land use change and forestry	National CO_2 emissions without land use change and forestry*	National CO_2 emissions with land use change and forestry
	A	B	C = A + B	D	E = C + D
Australia	156,293[a]	-25,450[b]	130,843	288,965	419,808
Austria[c]				59,200	59,200[d]
Belgium				114,410	114,410[d]
Canada			-282	457,441	457,159[d]
Czech Republic[z]			-2,265	165,792	163,527
Denmark			-2,600	52,100	49,500[d]
Estonia	3,399	-11,347	-7,947	37,947	30,000
Finland	72,000[e]	-103,000	-31,000[f]	53,900	22,900[d]
France	13,974[g]	-44,675[h]	-32,168[i]	366,536	334,368
Germany[z]			-20,000	1,015,000	995,000[d]
Greece				82,100	82,100[d]
Hungary	7,543[j]	-12,010[k]	-4,467[l]	71,673[m]	67,206[d][n]
Ireland			0	30,719	30,719[d]
Italy	3,670	-40,400	-36,730	428,941	392,211
Japan			-90,000[o]	1,173,360	1,083,360[d]
Latvia	6,280	-20,580	-14,300	22,976	8,676[d]
Liechtenstein				208	208[d]
Monaco				71	71[d]
Netherlands			-120	167,600	167,480[d]
New Zealand	1,255[a]	-17,971	-16,716	25,530	8,814
Norway[p]	16,900	-27,100	-10,200	35,533	25,333[d]
Poland[q]	[r]	[s]	[t]	414,930[u]	414,930[d][v]
Portugal				42,148	42,148[d]
Romania				171,103	171,103[d]
Russian Federation			-733,200	2,386,595	1,653,395[d]
Slovak Republic	462	-4,913	-4,451	58,278	53,827[d]
Spain[z]			-23,170	248,005	224,835
Sweden	75,434	-109,802	-34,368	61,256	26,888
Switzerland	5,317	-10,561[w]	-5,244	43,600	38,356
UK[x][z]	2,567[y]	-8,704	-6,137	577,012	570,875[d]
USA			-436,000	4,957,022	4,521,022
Total	365,094	-436,513	-1,380,522	13,609,951	12,229,429

*See table A.1.

This table summarizes information on the land use change and forestry source/sink category. It aims to present the data provided in a consistent and coherent manner, taking into account the different ways in which Parties have reported information for this category. The presentation of this table should improve as the availability of related data increases. Emission estimates were provided for the following sub-source/sink categories not addressed by the IPCC Guidelines: peat extraction, drainage of wetlands and deep peats.

Notes

a) Emission from forest clearing and on-site burning.
b) Includes sequestration from grassland conversion (-17,450 Gg) and managed forests (-8,000 Gg).
c) Category not estimated by Party but thought to be small.
d) These Parties originally excluded *land use change and forestry* from their total CO_2 estimates.
e) Emission estimates from cultivated peatlands (3,000-10,000 Gg) and non -viable drainage areas (1,000-5,000 Gg) were also provided but not included in this table.
f) *Land use change and forestry* estimate including cultivated peatlands and non-viable drainage areas would amount to 16,000-27,000 Gg.
g) Includes emissions from forest clearing and on-site burning (4,374 Gg) and grassland conversion (9,240 Gg).
h) Includes sequestration from abandonment of managed lands (-1,797 Gg) and managed forests (-42,878 Gg).
i) Takes account of double-counting of 1,467 Gg between forest clearing and grassland conversion.
j) Emissions for base period (1985-1987): 8,868 Gg.
k) Emissions for base period (1985-1987): -11,965 Gg.
l) Emissions for base period (1985-1987): -3,097 Gg.
m) Emissions for base period (1985-1987): 83,676 Gg.
n) Emissions for base period (1985-1987): 80,579 Gg.
o) Includes sequestration in wood products (-10,000 Gg) which, as recommended by the IPCC Guidelines, should not be reported as removals unless a net increase in stocks of forest products can be documented.
p) Includes CO_2 emissions from biomass.
q) Party did not provide *land use change and forestry* estimates for 1990.
r) Emissions for base year (1988): 14,920 Gg.
s) Removals for base year (1988): -33,200 Gg.
t) *Land use change and forestry* estimates for base year (1988): -18,280.
u) National CO_2 emissions without *land use change and forestry* for base year (1988): 483,700 Gg.
v) National CO_2 emissions with *land use change and forestry* for base year (1988): 465,420 Gg.
w) Includes sequestration in wood products (-550 Gg) which, as recommended by the IPCC Guidelines, should not be reported as removals unless a net increase in stocks of forest products can be documented.
x) An estimate of (0 to - 1,883 Gg) from conversion of grassland to cultivated lands was also provided but not included in this table.
y) Emissions from peat extraction, drainage of wetlands and deep peat.
z) Revised/additional data were provided during the in-depth review.

Table A.4 Anthropogenic emissions of CH_4, 1990 (Provisional)
(Gigagrams and percentage of total by Party)

	Energy				Agriculture				Waste		Other***		Total
	Fuel combustion		Fugitive fuel emissions		Livestock*		Other**						
	(Gg)	%	(Gg)	%	(Gg)	%	(Gg)	%	(Gg)	%	(Gg)	%	(Gg)
Australia	28	0.4	1,026	16.4	3,005	48.1	396	6.3	1,391	22.3	397	6.4	6,243
Austria	24	4.0	92	15.2	259	42.9			228	37.9			603
Belgium[a]													
Canada[c]	29	0.9	1,247[b]	40.4	979	31.7	0	0.0	796[b]	25.8	39	1.3	3,089
Czech Republic[c]	59	6.3	531	56.4	195	20.7			151	16.0	6	0.6	942
Denmark	11[d]	2.8	11	2.8	262	64.5			122	29.9			406
Estonia	3	0.7	218	42.9	60	11.8			227	44.6			509
Finland	19	7.5	[e]		94	37.3			139	55.2			252
France	184	6.4	311	10.7	1,612	55.7	37	1.3	749	25.9	3	0.1	2,896
Germany[c]	245	4.3	1,549	27.1	2,045	35.7	0	0.0	1,870	32.7	14	0.2	5,723
Greece	19	5.6	39	11.4	165	48.0	10	2.9	110	32.1			343
Hungary	6[f]	1.0	366[g]	67.2	170[h]	31.2	3[i]	0.6	[j]				545[k]
Ireland	5	0.7	10	1.3	603	75.8	41	5.1	136	17.1	0	0.0	796
Italy	66	1.7	348	8.9	1,541	39.5	319	8.2	1,611	41.3	16	0.4	3,901
Japan	25	1.8	100	7.3	520	37.8	267	19.4	465	33.8			1,377
Latvia	2	1.5	2	1.1	111	70.0			44	27.4			159
Liechtenstein[l]													1
Monaco[m]													
Netherlands	28	2.6	149	14.0	508	47.6			382	35.8			1,067
New Zealand	28	1.3	33	1.6	1,618[n]	76.6			433[o]	20.5			2,112
Norway	17	5.9	13	4.5	91	31.5			167	57.8	1	0.3	289[p]
Poland[q]	[r]		[s]		[t]		[u]		[v]				6,100[w]
Portugal	13	5.7	2	0.9	163	72.0	13	5.7	35	15.5	0	0.2	226
Romania[l]													2,355[x]
Russian Federation[l]			19,600[y]	72.6	4,900	18.1	100	0.4	2,400	8.9			27,000
Slovak Republic	21	6.1	96	27.7	171	49.3	1	0.3	53	15.3	5	1.4	347
Spain[c]	112	5.1	695	31.7	772	35.3	115	5.3	491	22.5	2	0.1	2,188
Sweden	33	10.0	0	0.0	196	59.6			100	30.4	0	0.0	329
Switzerland	2[z]	0.8	9	3.2	215	78.4	0	0.0	48[z]	17.5	[z]		274[z]
UK[c]	74	1.6	1,238	27.3	1,129	24.9	12	0.3	2,078	45.9			4,531
USA	613[aa]	2.3	7,641	28.3	8,088	30.0	508	1.9	10,150	37.6			27,000
Total[ab]	1,674	1.8	35,326	38.0	29,472	31.6	1,822	2.0	24,376	26.2	483	0.5	101,603

*Includes enteric fermentation and animal wastes. **Includes rice cultivation, agricultural waste burning and savannah burning. ***Includes *solvent use*, *industrial processes* and *land use change and forestry*. Emission estimates were provided for the following source/sink categories not addressed by the IPCC Guidelines: *industrial processes*, including iron and steel manufacturing, carbon black production and industrial incineration, inorganic chemical (carbide) manufacture, as well as compost, food processing, and sewage sludge from landfills.

Notes

a) Belgium did not report anthropogenic emissions of CH_4.
b) Figure corrected during the in-depth review.
c) Revised/additional data were provided during the in-depth review.
d) The electricity import correction of 0.1 Gg was subtracted by the secretariat from the subtotal given in the communication.
e) Methane emissions from refineries were included in NMVOC emissions estimates.
f) Emissions for base period (1985-1987): 8 Gg.
g) Emissions for base period (1985-1987): 448 Gg.
h) Emissions for base period (1985-1987): 205 Gg.
i) Emissions for base period (1985-1987): 4 Gg.
j) No activity/production data available.
k) Total emissions for base period (1985-1987): 665 Gg.
l) Parties did not provide inventory data according to the IPCC reporting format.
m) Party did not provide estimates but indicated that emissions were negligible.
n) Includes 118 Gg from animal waste. The estimate presented in the communication was <118 Gg.
o) Includes 296 Gg from "other" (primary production processing). The estimate presented in the communication was <296 Gg.
p) Estimate corrected during the review.
q) The secretariat chose to report the emissions total only, as the Party used the CORINAIR reporting format in providing its 1990 inventory data.
r) Emissions for base year (1988): 9 Gg.
s) Emissions for base year (1988): 3,870 (3,800-3,940) Gg.
t) Emissions for base year (1988): 1,450 Gg.
u) Emissions for base year (1988): 90 (40-130) Gg.
v) Emissions for base year (1988): 640 (436-835) Gg.
w) Emissions for base year (1988): 6,060 Gg.
x) Estimate calculated by the secretariat using the per capita emission and population figures provided by the Party, as well as emissions for base year (1989): 2,354 Gg.
y) Includes emissions from consumption (fuel combustion).
z) Energy and transformation industries, industry, commercial/institutional, residential, agriculture and forestry, biomass burned for energy, industrial processes, waste incineration for the production of energy were included in VOC emissions estimates.
aa) Includes emissions from Party's territories.
ab) The percentage of the total accounted for by each category is calculated on the basis of the overall total with the exclusion of Liechtenstein, Poland and Romania (93,201 Gg) since data for the individual categories for these Parties are not included in this table.

Figure A.2
Distribution of CH_4 emissions by source category

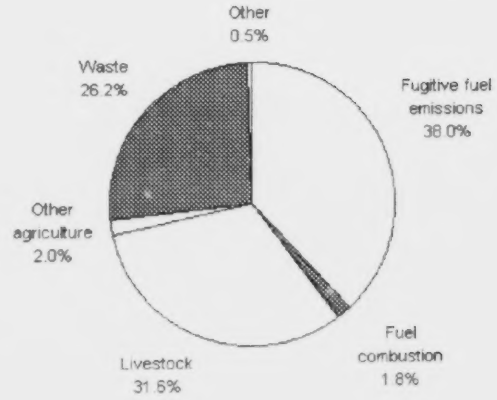


Table A.5 Anthropogenic emissions of N_2O, 1990 (Provisional)
(Gigagrams and percentage of total by Party)

	Energy				Industrial processes		Agriculture		Waste		Other*		Total
	Transport		Other										
	(Gg)	%	(Gg)	%	(Gg)	%	(Gg)	%	(Gg)	%	(Gg)	%	(Gg)
Australia	2.3	3.8	1.3	2.1	0.8	1.3	52.4	87.1			3.4	5.7	60.1
Austria	0.5	13.0	0.9	22.0	0.6	15	2.0	49.0					4.1
Belgium[a]													
Canada	35.5	38.9	12.1	13.3	31.3	34.3	10.7	11.7	0.0	0.0	1.6[b]	1.8	91.2
Czech Republic[c]	1.0	4.2	18.0	75.0	3.0	12.5	2.0	8.3					24.0
Denmark	0.4	3.9	1.3[d]	12.7			8.5	83.3					10.2
Estonia			5.2[e]	84.6			1.0	15.4					6.2
Finland	5.0	22.7	2.0	9.1	3.0	13.6	12.0	54.5					22.0
France	4.1	2.3	7.5	4.2	102.5	58.0	61.3	34.7	1.2	0.7	0.1	0.1	176.7
Germany[c]	8.0	3.9	25.0	12.3	83.0	40.7	81.0	39.7	0.0	0.0	6.0	2.9	204.0
Greece	1.2	8.8	2.5	18.4	2.4	17.6	7.5	55.1					13.7
Hungary			7.3[f]	63.9			4.1[g]	36.1					11.4[h]
Ireland	0.2	0.0	2.6	6.1	0.0	0.0	39.5	93.4	0.0	0.0	0.0	0.0	42.3
Italy	3.5	2.9	38.2	31.8	14.8	12.3	58.7	48.8	0.1	0.1	5.0	4.2	120.3
Japan	13.0	27.5	8.6	18.2	15.0	31.7	4.7	9.9	6.0	12.7			47.3
Latvia	0.1	4.6	0.9	38.7			1.4	56.7					2.4
Liechtenstein[i]													0.1
Monaco[j]													
Netherlands	5.4	9.1	0.7	1.2	16.3	27.4	22.1	37.1	4.1	6.9	10.9[k]	18.3	59.5
New Zealand	5.2	62.7	2.5	30.1			[l]		0.6	7.2			8.3
Norway	1.0	6.4	1.5	96.0	6.7	42.9	6.4	41.0	0.0	0.0			15.6
Poland[m]	[n]		[o]				[p]						156.0[q]
Portugal	0.4	3.8	4.6	43.8	1.9	18.1	3.6	34.3	0.0	0.0	0.0	0.0	10.5
Romania													106.8[r]
Russian Federation													820.0
Slovak Republic[s]	0.2	1.4	3.6	24.5	2.1	14.3	8.8	59.9					14.7
Spain[c]	2.1	2.2	18.6	19.7	10.4	11.0	63.4	67.0	0.1	0.1	0.0	0.0	94.6
Sweden	0.4	2.6	4.2	27.7	2.7	17.7	7.9	51.9					15.2
Switzerland	0.8	5.3	0.7	4.6	0.4	2.6	13.3	87.5			0.0	0.0	15.2
UK[c]	1.8	1.7	3.0	2.7	93.0	85.9	10.5	9.7					108.3
USA	92.3	22.4	35.1[t]	8.5	96.1	23.4	187.9	45.7					411.4
Total[u]	184.4	11.6	207.9	13.1	486.0	30.6	670.7	42.2	12.1	0.8	27.0	1.7	2,672.1

*Includes *solvent use* and *land use change and forestry*. Emissions estimates were provided for the following source/sink categories not addressed by the IPCC Guidelines: solvent use, non-fertilizer induced emissions from agricultural soils, polluted inland and coastal waters, wastewater treatment, caprolactam production and animal wastes.

Notes

a) Party did not report anthropogenic emissions of N_2O.
b) Figure confirmed during the in-depth review.
c) Revised/additional data were provided during the in-depth review.
d) The electricity import correction of 0.2 Gg was subtracted by the secretariat from the subtotal given in the communication.
e) Includes emissions from industry, energy and transport.
f) Emissions from base period (1985-1987): 8.4 Gg. Includes transport.
g) Emissions from base period (1985-1987): 4.6 Gg.
h) Total emissions for base period (1985-1987): 13.0 Gg.
i) Parties did not provide inventory data according to the IPCC reporting format.
j) Party did not provide estimates but indicated that emissions were negligible.
k) Emissions from polluted inland and coastal water were reported as an additional source/sink category.
l) A range of 1 to 37 Gg was provided, but not included in the total reported in the current table.
m) The secretariat chose to report the emissions total only, as the Party used the CORINAIR reporting format in providing its 1990 inventory data.
n) Emissions for base year (1988): >0.3 Gg.
o) Emissions for base year (1988): >0.3 Gg.
p) Emissions for base year (1988): 73 (1-145) Gg.
q) Emissions for base year (1988): 73 Gg.
r) Estimate calculated by the secretariat using per capita emission and population figures by the Party, as well as emissions for base year (1989): 122.7 Gg.
s) Party provided estimates for an additional category, water surfaces (1.3 Gg), which is not included in this table.
t) Emissions from the Party's territories were not estimated.
u) The percentages of the total accounted for by each category are calculated on the basis of the overall total with the exclusion of Liechtenstein, Poland, Romania and the Russian Federation (1,590.2 Gg) since data for the individual categories for these Parties are not included in the table.

Figure A.3.
Distribution of N_2O emissions by source category

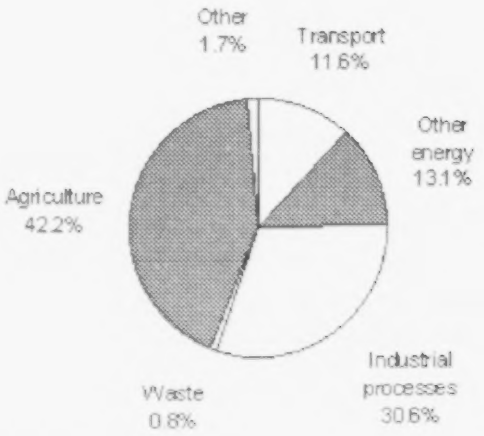


Table A.6 Anthropogenic emissions from international bunkers, 1990[a] (Gigagrams) **(Provisional)**

	CO_2	CH_4	N_2O	CO	NO_x	NMVOC
Australia	6,281	0.13	0.19	6.80	70.81	2.28
Austria						
Belgium						
Canada	5,632	0.29	0.60	37.80	17.70	10.70
Czech Republic						
Denmark	4,974	0.10	0.10	17.30	71.20	2.70
Estonia						
Finland	2,800	1.00	1.00		22.00	
France	8,586	0.10	0.20	20.80	110.50	5.30
Germany[b]	19,000	0.00		96.00	206.00	23.00
Greece	11,730					
Hungary						
Ireland	1,172	0.10	0.16	2.19	5.35	0.36
Italy	12,451	0.70	2.44	23.22	250.02	1.22
Japan	31,000					
Latvia						
Liechtenstein						
Monaco						
Netherlands	40,400					
New Zealand	2,398	1.10	2.20		44.10	
Norway	1,800	0.40	0.10	2.90	32.80	1.20
Poland[c]	[d]	[e]	[f]	[g]	[h]	[i]
Portugal	3,938	0.60	0.20	243.20	43.00	32.20
Romania						
Russian Federation						
Slovak Republic						
Spain[b]	18,024	2.03	0.30	17.01	271.87	11.43
Sweden	4,190	1.30	0.04	44.00	60.00	15.00
Switzerland	2,100					
UK[b]	20,729	0.44	0.18	26.90	249.51	3.40
USA	82,866					
Total	280,071	8.29	7.71	538.12	1,454.86	108.79

Notes

a) Austria, Belgium, the Czech Republic, Estonia, Hungary, Latvia, Liechtenstein, Monaco, Romania, the Russian Federation and the Slovak Republic did not report emissions from bunker fuels.
b) Revised/additional data were provided during the in-depth review.
c) Party did not provide 1990 emission estimates from bunker fuels.
d) Emissions for base year (1988): 530 Gg.
e) Emissions for base year (1988): 0.1 Gg.
f) Emissions for base year (1988): 0.001 Gg.
g) Emissions for base year (1988): 25 Gg.
h) Emissions for base year (1988): 10 Gg.
i) Emissions for base year (1988): 0.6 Gg.

Table A.7 Anthropogenic emissions of precursor gases, 1990[a] (Gigagrams) **(Provisional)**

	CO	NO_x	NMVOC
Australia	26,074	1,874	2,236
Austria	1,683	225	415
Belgium			
Canada	10,225[b]	2,090[b]	2,104[a]
Czech Republic[c]	685	877	313
Denmark	770[d]	269[e]	165[f]
Estonia	294	153	
Finland	487	295[g]	219
France	10,952	1,722	2,424
Germany[c]	10,455	3,008[g]	3,005
Greece	1,480	338	236
Hungary	734[h]	200[i]	143[j]
Ireland	429	115	197
Italy	9,333	2,128	2,401
Japan	2,809	1,898	2,060
Latvia	363	90	63
Liechtenstein[k]	2	1	2[b]
Monaco			
Netherlands	1,030	575	459
New Zealand	0	145	0
Norway	940	231	251
Poland	7,400[m]	1,450[n]	13,367[o]
Portugal	1,083	214	206
Romania[k]	3,179[p]	520[q]	1,084[r]
Russian Federation	8,100	3,000[g]	4,100
Slovak Republic	489	227	147
Spain[c]	5,573	1,201	1,080
Sweden	1,612	374	539
Switzerland	430	184[s]	297
UK[c]	6,682	2,740	2,540
USA	82,674	21,362[t]	19,123
Total	195,967	47,506	59,176

Notes

a) Belgium and Monaco did not report emissions of precursor gases.
b) Estimates corrected during the in-depth review.
c) Revised/additional data were provided during the in-depth review.
d) The electricity import correction of 0.7 Gg was subtracted by the secretariat from the subtotal given in the communication.
e) The electricity import correction of 24 Gg was subtracted by the secretariat from the subtotal given in the communication.
f) The electricity import correction of 0.1 Gg was subtracted by the secretariat from the subtotal given in the communication.
g) Estimates from the Party expressed as NO_2.
h) Emissions for base period (1985-1987): 743 Gg.
i) Emissions for base period (1985-1987): 231 Gg.
j) Includes methane VOCs. Figures given for 1991. Emissions for base period (which in this case is 1988): 205 Gg.
k) Parties did not provide inventory data according to the IPCC reporting format.
l) Corresponds to VOC emissions.
m) Emissions for base year (1988): 2,730 Gg.
n) Emissions for base year (1988): 600 Gg.
o) Emissions for base year (1988): >352 Gg.
p) Estimate calculated by the secretariat using the per capita emission and population figures provided by the Party, as well as emissions for base year (1989): 3,311 Gg.
q) Estimate calculated by the secretariat using the per capita emission and population figures provided by the Party, as well as emissions for base year (1989): 544 Gg.
r) Estimate calculated by the secretariat using the per capita emission and population figures provided by the Party, as well as emissions for base year (1989): 1,121 Gg.
s) Non-ferrous emissions reported as being <0.1 have not been included in this table.
t) Emissions from the Party's territories were not estimated.

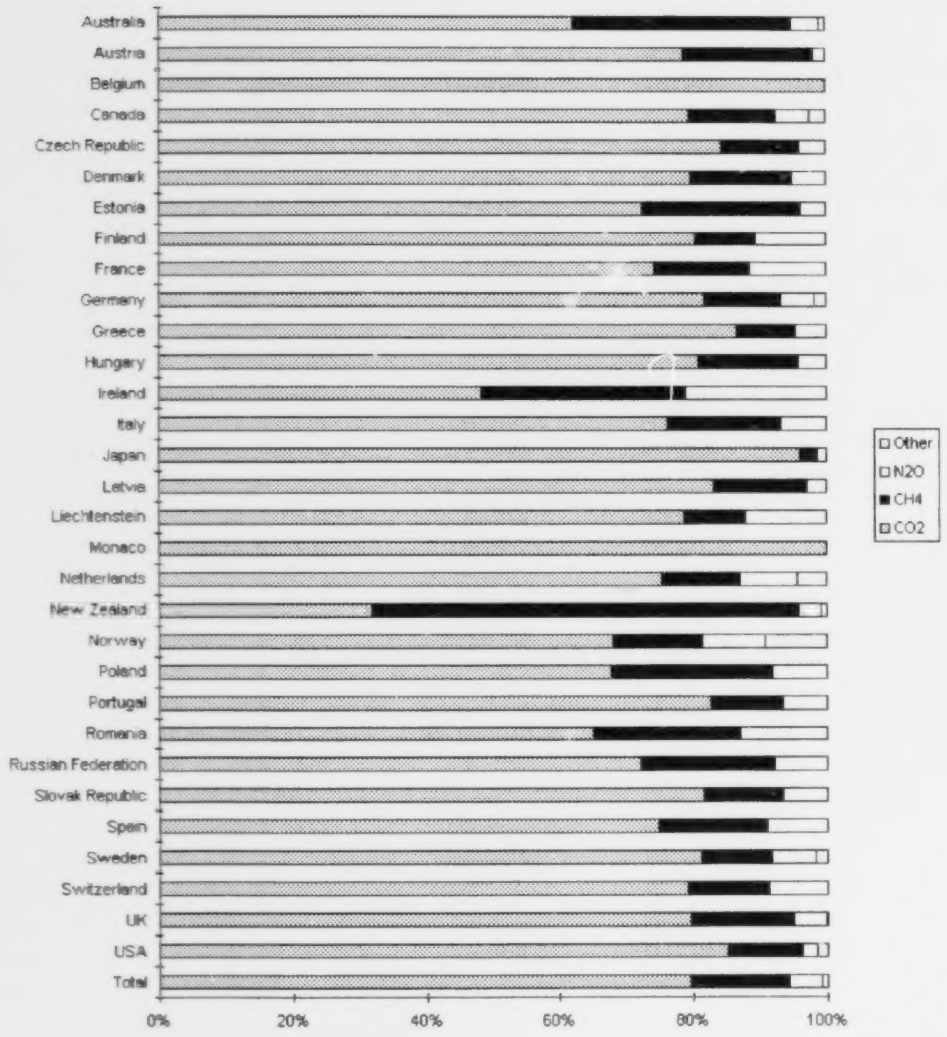
Table A.8 Anthropogenic emissions of other greenhouse gases, 1990[a] (Gigagrams) **(Provisional)**

	HFCs			PFCs		SF_6
	HFC 134a	HFC 23a	HFC 152a	CF_4	C_2F_6	
Australia				0.580	0.0400	
Austria						
Belgium						
Canada				1.400	0.1440	0.120[b]
Czech Republic						
Denmark						
Estonia						
Finland						
France						
Germany				1.000	0.1500	0.500
Greece						
Hungary						
Ireland						
Italy	0.00	0.00	0.00	0.014	0.0014	
Japan						
Latvia						
Liechtenstein						
Monaco						
Netherlands		0.00		0.516	0.0516	
New Zealand					0.100	
Norway			0.003	0.369	0.0160	0.092
Poland						
Portugal						
Romania						
Russian Federation						
Slovak Republic						
Spain						
Sweden		0.00			0.060	0.040
Switzerland						
UK				0.274	0.0280	
USA	0.5	5.52	0.300	2.700[b]		

Notes

a) Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Greece, Hungary, Ireland, Japan, Latvia, Liechtenstein, Monaco, Poland, Portugal, Romania, the Russian Federation, the Slovak Republic, Spain and Switzerland did not report emissions for these gases.
b) Estimates provided during the in-depth review.

Figure A.4
Relative contribution of different greenhouse gases by Party*



*Excludes land use change and forestry. "Other" includes PFCs, HFCs and SF_6. IPCC-1994 GWP values with a time-horizon of 100 years were used by the secretariat for comparative purposes. Only 10 Parties reported emissions for other greenhouse gases (see table A.8). New Zealand reported emissions for PFCs of 0.1 Gg. The secretariat has assumed that approximately 5 per cent of these emissions are from C_2F_6 and the remaining 95 per cent from CF_4. Belgium only reported CO_2 emissions. Monaco reported CH_4 and N_2O emissions as negligible.

(Provisional)

Table B.1. Projected anthropogenic emissions of CO_2, excluding land use change and forestry (Gigagrams)

	Data from inventory	Data from projection		Variations		Updated variations from projection based on in-depth reviews[f] (Percentage)
	1990 level[a] (Gg)	1990 level[b] (Gg)	2000 level[c] (Gg)	from inventory (Percentage)	from projection (Percentage)	
Australia	288 965	288 965	332 799	15.1	15.1	
Austria	59 200	59 900	65 800	11.1	9.8	
Belgium	114 410	106 300	104 900 - 109 360	--	(-1.3) - (2.9)	
Canada	457 441	461 200	510 000	11.5	10.6	12.5
Czech Republic	165 792	163 584	135 536	-18.2	-17.2	-17.0
Denmark	52 100	58 353	53 753	3.2	-7.9	
Estonia	37 947	..	..	--	--	
Finland	53 900	54 200	70 200	30.5	29.5	
France	366 536	367 000	399 000	8.8	8.7	
Germany	1 015 000	1 032 000	..	--	--	(-15) - (-13)
Greece	82 100	82 100	94 500	15.1	15.1	
Hungary	71 673	69 116	68 741	-4.1	- 0.6	
Hungary	81 534[d]	81 534[d]	68 741	-15.7	-15.7	
Ireland	30 719	30 719	36 988	20.4	20.4	
Italy	428 941	423 776	482 440	12.5	13.8	
Japan	1 173 360	1 173 000	1 200 000	2.3	2.3	
Latvia	22 976	22 976	16 956	-26.2	-26.2	
Liechtenstein	208	208	245	18.1	18.1	
Monaco	71	..	..	--	--	
Netherlands	167 600	174 000	167 600	0.0	-3.7	+
New Zealand	25 530	25 530	29 550	15.7	15.7	-
Norway	35 533	35 400	39 500	11.2	11.6	16.0
Poland	414 930	-	338 000 - 455 000	(-18.5) - (9.7)	--	
Poland	483 700[e]	458 000[e]	338 000 - 455 000	--	(-26.2) - (-0.7)	
Portugal	42 148	38 689	54 274	28.8	40.3	
Romania	171 103	..	..	--	--	
Russian Federation	2 386 595	2 330 000	1 930 000 - 2 026 000	(-19.1) - (-15.1)	(-17.2) - (-13.0)	
Slovak Republic	58 278	57 808	48 639	-16.5	-15.9	
Spain	248 005	222 908	276 523	--	24.1	15.8
Sweden	61 256	61 300	63 800	4.2	4.1	
Switzerland	43 600	45 400	43 800	0.5	-3.5	
UK	577 012	586 720	586 720	1.7	0	(-8) - (-4)
USA	4 957 022	5 012 789	5 163 136	4.2	3.0	+

[a] Data from inventory table A.1.

[b] Minor differences in 1990 levels between inventories and projections are, for example, due to late revisions of inventories, rounding, calibration of models, or the projection of only a subset of the sources. For some countries differences are also due to statistical adjustments.

[c] "With measures" levels for 2000.

[d] Average of emissions in 1985-1987.

[e] Base year 1988.

[f] Additional and/or revised information for projections was often provided in the course of in-depth reviews. Where possible, this information is reflected here in the form of *preliminary* revised estimates. Further additions to the preliminary revisions presented here are envisaged in the second compilation and synthesis of national communications from Annex I Parties. A plus or minus symbol indicates an increase or decrease to the variations from projection column and that an exact numerical figure is not currently available. Additional details on revisions for each country can be found in the individual in-depth review reports.

Notes*

Australia: The effect of measures in 2000 (table 6.2, p.74) was subtracted from the reference scenario (table 6.1, p.72) reflecting "delayed or partial implementation, and/or other conditions which reduce the probability of effectiveness. This scenario can be taken to be close to the current rate of implementation" (p.74). In general, Australia assumes that existing measures will continue at the current rate of implementation (p.80). Fiscal years are used.

Austria: The 2000 figures are from the Institute of Economic Research (IER) reference scenario. Process emissions are assumed to be stable (footnote, p.2) and added to pyrogenic emissions. The communication states that the scenario does not represent all policies and measures implemented or committed to; these are not fully quantified and may permit Austria to "stabilize its CO_2 emissions by the time period around 2000 to 2005" (p.4). The scenario includes structural shifts in industry away from energy intensive primary industries, sustained efforts to improve energy utilization (generating 1.5 per cent energy efficiency improvement per annum) and preferential treatment of less environmentally damaging and renewable resources as opposed to fossil fuels (p.82).

Belgium: Two different projection approaches resulted in -1.3 per cent and 2.9 per cent growth, respectively. The projection figures only reflect energy-related emissions and do not include the impact of the European energy/ CO_2 tax under consideration. Comparison between inventories and projection figures are non-applicable because the statistical base for the projection models is significantly different from the inventory data.

Canada: Projections (table 13.11, p.128) incorporate "the effects of a number of federal and provincial policies, programs and measures currently in place or in the process of implementation" (p.128). The figure in the "updated variations" column refers to revised projections as reflected in Canada's National Action Program on Climate Change from 1995.

Czech Republic: The figures for 2000 were calculated from percentage decreases projected (12.3 per cent) and additional information (p.14). The estimate of effects of policies and measures implemented (p.27) was subtracted from a scenario described as assuming "slow implementation of measures, or not at all" (p.13).

Denmark: Figures were taken from table 3.2, p.41, of the communication, noting that slightly revised figures were given on p.75. Projections assume *energy* measures (Energy 2000 Follow Up = 1993) yet to be implemented, and current policies in other sectors. The projection figure used for 1990 is adjusted for electricity imports.

Estonia: No projections were provided.

Finland: The projection allows for the construction of Finnish electricity production capacity to replace current imports (p.19), which in 1990 were equivalent to 11 Mt CO_2. The projection figure is considered the most likely option and takes into account energy cuts brought about by taxation, energy conservation, more use of bioenergy and the adoption of new technology.

France: The projection figures are taken from the summary of the national communication, included in the report "France and the Greenhouse Effect" (p. 27). The scenario includes measures such as a CO_2 tax equivalent to 70 ECU per tonne of carbon.

Germany: For 2005 the level was projected to be 980,000 Gg (table 6.15, p.144). (The communication does not specify which measures are included in the projection for 2005.) During the in-depth review an estimate of CO_2 emissions for 2000 of -15 to -13 per cent less than in 1990 was provided.

Hungary: Hungary has asked for special consideration under Article 4.6 to use 1985-1987 as the base period. The average emissions comparable with the projections figures in these years were 81,534 Gg. The projections only include fuel-related emissions. The figures assume implementation of the National Energy Efficiency and Energy Improvement Programme (2000 S scenario, table 6.6, p.78). Figures based on other methodologies for emission calculations are also given (pp.73-74).

Ireland: A continuation of existing policies would indicate a greater increase ("20 per cent, or an increase of 11 per cent if account is taken of increased carbon capacity" (p.2)).

Italy: A business-as-usual scenario was chosen (tables 4.4 and 4.5), noting that scenarios for net emissions were given "with measures" (in table 4.8), resulting in lower estimates for 2000. If the projection for *land use change and forestry* is used to adjust the figures in table 4.8, the "2000 projection" figures would be 438,440 - 459,440 Gg, and the "variations from projection", 3.5 - 8.4 per cent.

Japan: The projection is based on the Long-term Energy Supply and Demand Outlook. The projection assumes that "all energy conservation measures incorporated in the Outlook are fully implemented" (p.140) and control measures in *industrial processes* and measures to reduce CO_2 emissions from municipal waste are fully implemented (e.g., waste projection is "based on the assumption that serious efforts will be made to thoroughly recycle paper waste" (p.141)). Fiscal years are used.

Monaco: Reported that CO_2 emissions are unlikely to increase by the year 2000.

Netherlands: The projection takes into account the effects of policies and measures decided prior to the submission of the communication (Energy Policy Scenario, p.59). The 1990 projection figure includes a temperature adjustment. During the in-depth review, information was given that showed a higher growth in emissions than was reflected in the projections.

New Zealand: The figures for 2000 were given as an interval (29,160 - 29,940 Gg. table 7.1, p.46). The measures included in the projection are not specified. During the in-depth review, information was given that showed a higher actual growth in the 1990s than was reflected in the projections.

Norway: The projection reflects "current policies" (p.36) , including carbon taxes that were implemented in 1991. A revision was made during the in-depth review to account for higher growth than expected, especially in the off-shore petroleum sector.

Poland: Poland has asked for special consideration under Article 4.6 to use 1988 as the base year. Poland presented a set of different projections for 2000 based on two approaches. "The presented assessments of future greenhouse gas emissions do not take into account the currently undertaken actions, ... which lead to the further emission reductions" (p.44). These projections are for the energy sector only. The 1988 inventory figure corresponding to the energy section projections would be 462,820 Gg.

Portugal: Projections are for emissions from fuel combustion only.

Romania: No projections were provided.

Russian Federation: The projection figures for 2000 were given as a range of CO_2 emissions for probable and optimistic scenarios based on possible versions of fuel and energy complex development and with consideration for consumption of primary energy and its transformation products in all sectors of the national economy (pp. 50-51). Projections are for emissions from fuel combustion only.

Spain: The projection takes into account only energy-related CO_2. It is based on the reference scenario from the Plan Energético Nacional 91 (PEN 91), and when the effects of measures contained in the Plan de Ahorro y Eficiencia Energética (PAEE) (described in the communication), were taken into account, the projected increase of emissions of CO_2 was reduced from 45 per cent to 24 per cent in 2000 from the 1990 level (p.91). Actual development has not been in line with the assumptions from PEN 91; GDP growth especially has been lower. A revision is therefore envisaged. A revision of the estimates for GDP growth from 1995 to 2000 (3%/year) and of the evaluation of measures in the energy sector leads to a smaller increase in CO_2 emissions from 1990 to 2000 (from 218,000 to 252,502, as revised during the in-depth review).

Sweden: The projection is based on political decisions made to date (p.63), except for the changes in energy taxes as from 1 July 1994; the forecasts were made before that date. Sweden notes that if temperature adjustments of 3 $MtCO_2$ in the figures for 1990 had been made, projected emissions would have been stable (p.68).

Switzerland: Bunker fuels (2.1 $MtCO_2$ in 1990 and 2.5 $MtCO_2$ in 2000) are subtracted from the aggregate figures given in the report. The projection includes only measures already implemented or decided as of 1994 (pp.18-20, 74, 152). The inventory figure for 1990 was not adjusted for temperature (p.38), but the projection is based on a temperature-adjusted 1990 level of emissions (p.79).

UK: The "central growth/low fuel price" scenario (among several) is presented as the reference scenario for emissions. This includes an agreement with electric utilities on fuel choice and use of CHP after 1990 (p.17). In this projection emissions increased 10 MtC. The measures in place are estimated to reduce emissions in 2000 by 10MtC, which is subtracted from the projected 2000 level (p.16) and used for the table. A revision was provided during the in-depth review to account for new energy projections indicating CO_2 emissions of 4-8 per cent below 1990 levels by the year 2000.

USA: The projection includes policies and measures proposed by the Administration in the Climate Change Action Plan (technical supplement to the communication, pp.33-60), assuming "that the funding required will be committed" (technical supplement, p.55). The communication notes that some actions which "may yield significant reductions" are not included (p. 187), while economic growth has been more robust and oil prices lower than assumed. During the in-depth review stronger underlying growth in emissions was reported owing to more robust growth in the economy and reduced implementation of the Climate Change Action Plan.

*All references in parentheses are to the national communications.

(Provisional)

Table B.2. Projections for other greenhouse gases[a]
(CO_2 equivalent in Gigagrams, using 1994 GWPs, time-horizon = 100 years)[b]

	1990 level			2000 level			Variations		
	HFCs	PFCs	SF_6	HFCs	PFCs	SF_6	HFCs	PFCs	SF_6
	(CO_2 equivalent in Gg)			(CO_2 equivalent in Gg)			(Percentage)		
Australia	..	4 100	..	..	1 700	..	--	-59	--
Canada	..	10 600	2 990	..	14 100	..	--	33	--
Italy	0	106	..	2 500	63	..	≥ 0	-41	--
New Zealand	..	700	..	..	700	..	--	~ 0	--
Norway	0.4	2 500	2 300	600	1 700	800	≥ 0	-32	-65
Sweden	0	400	1 000	2 600	400	1 000	≥ 0	~ 0	~ 0
UK	..	2 100	..	..	~ 100	..	--	-95	--
USA	67 500	17 000	..	120 300	9 700	..	78	-43	--

[a] The figures are rounded.
[b] Figures provided on a weight basis have been converted.

Notes*

Australia: Estimates of effects of measures were subtracted from the baseline scenario (table 6.5, p.79). The same split between CF_4 and C_2F_6 was assumed in 2000 as in 1990 (table 6.1, p.72), making it possible to recalculate from other GWPs.

Canada: Estimates provided during the in-depth review.

New Zealand: Emissions of PFCs of 0.1 Gg were reported, largely from aluminium smelting. The secretariat has assumed that approximately 95 per cent was CF_4 and 5 per cent C_2F_6.

Norway: The same split between CF_4 and C_2F_6 was assumed in 2000 as in 1990, making it possible to recalculate from other GWPs.

UK: The lowest scenario (reported as most likely) has been chosen.

(Provisional)

Table B.3. Projected anthropogenic emissions of CH_4 (Gigagrams)[a]

	Data from inventory	Data from projection		Variations from projection
	1990 level[b]	1990 level[c]	2000 level[d]	
	(Gg)	(Gg)	(Gg)	(Percentage)
Australia	6 243	6 244	6 480	3.8
Austria	603	~ 600	~ 600	~ 0.0
Belgium	..	..	..	--
Canada	3 089	1 136	1 291	--
Czech Republic	942	623	511	-18.0
Denmark	406	406	354	-12.8
Estonia	509	..	..	--
Finland	252	252	204	-19.0
France	2 896	2 900	2 900	0.0
Germany	5 723	6 200	..	--
Greece	343	343.0	<343.0	<0.0
Hungary	545	492.0	278	- 43.5
Ireland	796	796	799	0.4
Italy	3 901	3 900	2 965	-24.0
Japan	1 377	1 380	1 150	-16.7
Latvia	159	159	114	-28.2
Liechtenstein	1	..	..	--
Monaco	..	..	..	--
Netherlands	1 067	1 067	786	-26.3
New Zealand	2 112	2 051	≤ 1 931	-5.9
Norway	289	291	278	-4.5
Poland	6 100	6 107	1 780	-70.9
Poland	6 060[e]	6 060[e]	1 780	-70.6
Portugal	226	..	..	--
Romania	2 355	..	..	--
Russian Federation	27 000	..	..	--
Slovak Republic	347	342	293	-14.3
Spain	2 188	..	..	--
Sweden	329	329	300	-8.8
Switzerland	274	274	256	-6.6
UK	4 531	~ 5 000	4 400	≤ -10.0
USA	27 000	27 669	22 335	-19.3

[a] Figures provided in CO_2 equivalent and in MtC have been converted.

[b] Data from inventory table A.4.

[c] Differences in 1990 levels between inventories and projections are, for example, due to late revisions of inventories, rounding, calibration of models, or the projection of only a subset of the sources.

[d] "With measures" levels for 2000.

[e] Base year 1988.

Notes*

Australia: The effects of measures are subtracted (table 6.3, p.76) from the reference "without measures" scenario (table 6.1, p.72) to obtain a "with measures" projection.

Austria: This is a "without measures" projection (p.88).

Canada: The 1990 projection figure only refers to energy-related emissions. In the 1990 inventory these were 1,085 Gg (table 13.11, p.128).

Czech Republic: Three major sources were projected covering 71 per cent of the inventory figure for 1990 under the assumption that measures will be implemented slowly or not at all (p.14).

France: The projection figures are taken from the summary of the national communication included in the report "France and the Greenhouse Effect" (p. 27).

Germany: For 2005 the figure was 3,250 Gg (table 6.11, p.142).

Greece: Overall emissions in 2000 are expected to be below the 1990 level, but no specific projection was provided.

Hungary: The corresponding 1985-1987 figure was 604.9 Gg. The figure does not include emissions from waste (fig. 6.6, p. 78). The decline reflects "the collapse of domestic coal mining and ... the significant changes in animal livestock" (p.78). The 2000 S scenario is used.

Italy: Slightly higher projections were given in table 4.8.

Japan: The projection takes into account only the effects of energy conservation and waste reduction measures (table 4.4.1, p.143).

Monaco: Emissions expected to be negligible in 2000 as in 1990.

Netherlands: The projection takes into account only the effects of policies initiated under the Second National Environmental Policy Plan (NEPP2) and the Second Memorandum on Energy Conservation (p.164).

New Zealand: The 1990 projection figure does not include energy-related emissions or emissions from *land use change and forestry*. In the 1990 inventory, all other emissions amounted to 2,051 Gg.

Poland: The 1990 figure is calculated by a different methodology from that used for the 1988 figure.

*All references in parentheses are to the national communications.

(Provisional)

Table B.4. Projected anthropogenic emissions of N_2O (Gigagrams)[a]

	Data from inventory	Data from projection		Variations from projection
	1990 level[b]	1990 level[c]	2000 level[d]	
	(Gg)	(Gg)	(Gg)	(Percentage)
Australia	60.1	60.1	61.1	1.5
Austria	4.1	~ 4.2	~ 4.2	~ 0.0
Belgium	..	..	..	..
Canada	91.2	47.0	51.9	..
Czech Republic	24.0	..	..	..
Denmark	10.2	10.5	11.5	9.5
Estonia	6.2	..	..	..
Finland	22.0	23.0	28.0	21.8
France	176.7	177.0	93.0	- 47.0
Germany	204.0	220.0	..	..
Greece	13.7	13.7	>13.7	>0.0
Hungary	11.4	7.3	6.2	-14.3
Ireland	42.3	42.3	43.7	3.3
Italy	120.2	119.4	123.6	3.5
Japan	47.3	47.0	~ 52.0	8.3
Latvia	2.4	2.4	1.4	-41.6
Liechtenstein	0.1	..	..	..
Monaco	..	..	..	..
Netherlands	59.5	59.6	62.2	4.4
New Zealand	8.3	..	..	~ 0.0
Norway	15.6	15.6	16.3	4.5
Poland	156.0	..	..	..
Poland	73.0[e]	73.0[e]	61.8	-15.3
Portugal	10.5	..	..	..
Romania	106.8	..	..	..
Russian Federation	820.0	..	..	..
Slovak Republic	14.7	14.7	14.1	-4.1
Spain	94.6	..	..	..
Sweden	15.2	15.2	13.0	-14.6
Switzerland	28.6	0.9	1.5	..
UK	108.3	~ 110.0	~ 30.0	~ -72.7
USA	411.4	529.7	421.0	-20.5

[a] Figures provided in MtC equivalents have been converted.

[b] Data from inventory table A.5.

[c] Differences in 1990 levels between inventories and projections are, for example, due to late revisions of inventories, rounding,calibration of models, or the projection of only a subset of the sources.

[d] "With measures" levels for 2000.

[e] Base year 1988.

Notes*

Australia: The effects of measures are subtracted (p. 76) from the "without measures" scenario (p.72) to obtain a "with measures" figure.

Austria: This is a "without measures" projection (p.88).

Canada: The 1990 projection figure refers only to energy-related emissions. In the inventory for 1990 these were 47.6 Gg (p.128).

Germany: The figure for 2005 was 170 Gg (table 6.11, p.142).

Greece: An increase in emissions is expected for the year 2000, but no specific projection was provided.

Japan: The projection figure for 2000 refers only to the effects of energy conservation and waste reduction measures (p.144).

Monaco: Emissions expected to be negligible in 2000 as in 1990.

Netherlands: The projection figure for 2000 incorporates the effects of policies and measures initiated under NEPP2. However, a number of policies implemented to reduce N_2O emissions associated with fertilizer application and animal manure have not been incorporated because of a lack of knowledge about their effects (p.65).

Switzerland: The projection figure covers only a minor part of the sources (from transportation) and does not allow for calculation of trends (p.80).

Hungary: The corresponding 1985-1987 inventory figure was 8.36 Gg. The projection figures include fuel-related emissions only. The 2000 S scenario is used (table 6.2b, p.74).

France: The projection figures are taken from the summary of the national communication included in the report "France and the Greenhouse Effect" (p. 27).

Poland: Different methods were used for calculating 1988 and 1990 figures. The communication states that the methodology used for 1990 overestimates the emissions and this, rather than real increase, explains the difference. Therefore a comparison with the 1990 figures appears to be non-applicable.

Romania: No projections were provided.

*All references in parentheses are to the national communications.

(Provisional)

Table B.5. Projected anthropogenic emissions of all greenhouse gases, excluding land use change and forestry[a]

(CO_2 equivalent in Gigagrams, using 1994 GWPs, time-horizon = 100 years)[b]

	Data from inventory	Data from projection		Variations from projection
	1990 level	1990 level[c]	2000 level	
	(CO_2 equivalent in Gg)	(CO_2 equivalent in Gg)		(Percentage)
Australia	465 885	465 909	516 822	10.9
Austria	75 567	~ 74 600	~ 81 886	~ 9.7
Belgium	114 410	106 300	104 900 - 109 360	(-1.3) - (2.9)
Canada	564 805	504 542	558 757	10.7
Czech Republic	196 551	178 848	148 056	-17.2
Denmark	65 413	71 765	66 221	-7.7
Estonia	52 401	..	..	..
Finland	67 114	67 734	84 158	24.2
France	493 852	495 000	500 000	1.0
Germany	1 220 493	1 256 500	..	..
Greece	94 887	82 100	94 500	15.1
Hungary	88 764	83 629	77 601	-7.2
Ireland	64 169	64 169	70 968	10.6
Italy	563 943	557 643	597 200	7.1
Japan	1 222 607	1 222 650	~ 1 245 336	~ 1.8
Latvia	27 639	27 639	20 199	-26.9
Liechtenstein	264	208	245	18.1
Monaco	71	..	..	..
Netherlands	213 377	219 810	207 383	-5.7
New Zealand	80 713	76 480	77 560	1.4
Norway	52 595	52 478	54 790	4.4
Poland[d]	655 530[d]	629 830[d]	401 386 - 518 386	(-36.3) - (-17.7)
Portugal	51 062	38 689	54 274	40.3
Romania	262 977	..	..	..
Russian Federation	3 310 495	2 330 000	1 930 000 - 2 026 000	(-17.2) - (-13.0)
Slovak Republic	71 483	70 891	60 329	-14.9
Spain	331 883	222 908	276 523	24.1
Sweden	75 739	74 383	75 440	1.4
Switzerland	59 883	52 394	50 567	-3.5
UK	724 754	~ 747 620	~ 704 520	~ -4.2
USA	5 838 784	5 949 981	5 979 274	0.5

[a] Figures from tables 1, 2, 3 and 4 have been used as the starting point for these projections. Only gases and sources that were projected are included.

[b] Figures differ from those in the communications where countries did not use IPCC 1994 GWPs (time-horizon 100 years).

[c] Major differences between inventory figures and projection figures for 1990 indicate that projections were not given for all gases reported in the inventories or for all sectors, or that temperature or electricity imports adjustments had been taken into account.

[d] 1988 is used as the base year in both inventories and projections.

Notes

Belgium: Only CO_2 emissions (excluding the *land use change and forestry* sector) were projected.

Canada: During the in-depth review a revision to the projected emissions was provided which indicated a variation of 13 per cent from projection rather than 10.7 per cent.

Estonia: No projections were provided.

France: The projection figures are taken from the summary of the national communication included in the report "France and the Greenhouse Effect"

Germany: As indicated in table B.1, revisions were provided during the in-depth review for CO_2 emissions. In the absence of projection information on other gases, these would make the percentage variation from projection in table B.5 negative.

Greece: Only CO_2 emissions (excluding the *land use change and forestry* sector) were projected.

Italy: The "business-as-usual" scenario was used, noting that seemingly lower figures for the year 2000 were given in table 4.8 (see note to table 1). The figures include HFCs and PFCs.

Liechtenstein: Only CO_2 emissions (excluding the *land use change and forestry* sector) were projected.

Monaco: Emissions are unlikely to increase by the year 2000.

New Zealand: During the in-depth review a revision to the projected emissions was provided which showed a smaller percentage variation than previously indicated and given in table B.5.

Norway: As indicated in table B.1, revisions provided during the in-depth review would make the percentage variation from projection larger than previously indicated and given in table B.5.

Portugal: Only CO_2 emissions (excluding the *land use change and forestry* sector) were projected.

Romania: No projections were provided.

Russian Federation: Only CO_2 emissions (excluding the *land use change and forestry* sector) were projected.

Spain: Only CO_2 emissions were projected. As indicated in table B.1, revisions provided during the in-depth review would change the percentage variation from projection in table B.5 from 24.1 to 15.8.

Sweden: During the in-depth review a revision provided to the projected emissions showed a smaller percentage variation than previously indicated and given in table B.5.

UK: As indicated in table B.1, revisions were provided during the in-depth review that would make the percentage variation from projection smaller than previously indicated and given in table B.5.

USA: During the in-depth review a revision to the projected emissions was provided which showed a larger percentage variation than previously indicated and given in table B.5.

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NATIONAL COMMUNICATIONS

COMMUNICATIONS FROM PARTIES INCLUDED IN ANNEX I TO THE CONVENTION

Progress report on in-depth reviews

Note by the secretariat

I. BACKGROUND

1. The Conference of the Parties at its first session (COP 1), by its decision 2/CP.1 (see FCCC/CP/1995/7/Add.1), provided guidance on the review of first communications from Parties included in Annex I to the Convention, including provisions for the in-depth review of first national communications from such Parties. The present note documents the progress achieved on work on the in-depth reviews, updating information contained in the previous progress report (see FCCC/SB/1995/1).

II. SCHEDULE FOR THE IN-DEPTH REVIEWS

2. Table 1 provides an update on the dates of ratification, acceptance, approval or accession of Parties included in Annex I to the Convention and the dates on which the national communications were received following the entry into force of the Convention.

Table 2 summarizes the schedule of in-depth reviews undertaken so far and the dates of the country visits. So far, 17 in-depth reviews of national communications (out of 31 communications submitted by 5 February 1996) have taken place. Three in-depth review reports and their summaries have been issued, and up to four reports are expected to be ready for submission to the subsidiary bodies at their second sessions. It is intended to complete as many in-depth review reports as possible by the COP 2.

3. According to decision 2/CP.1, paragraph 2 (a), national communications "should be subject to an in-depth review as soon as possible, but within one year of receipt by the secretariat". Owing to a shortage of resources and/or scheduling difficulties, however, it was not possible to fulfil this obligation. The secretariat intends to coordinate as many reviews as practicable before COP 2, subject to the availability of resources. Nevertheless, some in-depth reviews may take place in the period following COP 2.

III. REPORTS ON THE IN-DEPTH REVIEWS

4. In accordance with decision 2/CP.1, paragraph 2 (d), executive summaries of the reports of the in-depth reviews are distributed to all Parties and accredited observers. These summaries are one to two pages in length and are available in the six official languages of the United Nations. The full texts of the reports are available in their original language. These reports are also accessible on-line via World Wide Web (http://www.unep.ch/iucc.html). In-depth review reports, together with supplementary information provided by Parties during the in-depth reviews and that contained in national communications will serve as a basis for the second compilation and synthesis report to be submitted to COP 2 (see FCCC/SB/1996/1).

IV. SELECTION OF TEAMS

5. Under the guidance of the Chairmen of the subsidiary bodies, the secretariat has selected experts for participation in the in-depth reviews from among the names provided by Parties and intergovernmental organizations. In so doing, its aim has been to involve as many Parties as possible and to take due account of the need for various professional skills and language abilities. The composition of the teams which participated in the in-depth reviews is summarized in table 2. In selecting experts for participation in the reviews the secretariat sought to ensure the balance of skills and expertise, and of environmental and developmental perspectives and the necessary geographical balance among team members as well as linguistic requirements. In a few cases selected experts whose participation was confirmed originally were unable to take part in a country visit for personal or professional reasons. In such cases other Parties were helpful in providing experts on short notice or the secretariat involved nominated experts for participation in "paper" reviews.

6. To date, 45 Parties (22 developing, 16 developed, 7 economies in transition) and three countries not yet Parties to the Convention have nominated 177 national experts to participate in the in-depth reviews. Several of these nominations have been received only recently, so that fewer experts were available at the time of the reviews than at present. This also explains the fact that experts from some Parties were invited to participate in the in-depth reviews more than once.

7. The secretariat recalls that, according to decision 2/CP.1 of the Conference of the Parties (FCCC/CP/1995/7/Add. 1), the review teams are to be composed of experts selected from those nominated by Parties. Consequently, experts nominated by countries not Parties to the Convention are not eligible for participation in the in-depth reviews. Nevertheless, the secretariat has included those nominees in its roster of national experts with the intention of involving them in the in-depth reviews when the countries that nominated them become Parties to the Convention.

8. In its decision 2/CP.1, the COP invited intergovernmental organizations to make contributions of experts and/or resources, where possible, to assist the secretariat in undertaking the review of national communications. So far only the Organisation for Economic Co-operation and Development (OECD) and the International Energy Agency (IEA) have provided experts in response to this invitation. To involve a broader range of intergovernmental organizations, contacts with the United Nations Industrial Development Organization (UNIDO) and the Organization of Petroleum Exporting Countries (OPEC) were established by the secretariat.

TABLE 1. COMMUNICATIONS OVERVIEW

Annex I Parties	Date of ratification	Communication due	Communication received
Australia	30.12.92	21.09.94	19.09.94
Austria	28.02.94	29.11.94	23.09.94
Belarus*	-	-	-
Belgium**	16.01.96	15.07.96	15.03.95
Bulgaria	12.05.95	10.02.96	-
Canada	04.12.92	21.09.94	07.02.94
Czech Republic	07.10.93	21.09.94	17.10.94
Denmark	21.12.93	21.09.94	01.09.94
E.E.C.	21.12.93	21.09.94	-
Estonia	27.07.94	25.04.95	06.05.95
Finland	03.05.94	01.02.95	30.01.95
France	25.03.94	23.12.94	06.02.95
Germany	09.12.93	21.09.94	28.09.94
Greece	04.08.94	02.05.95	23.03.95
Hungary	24.02.94	25.11.94	22.11.94
Iceland	16.06.93	21.09.94	-
Ireland	20.04.94	19.01.95	15.11.94
Italy	15.04.94	14.01.95	04.04.95
Japan	28.05.93	21.09.94	20.09.94
Latvia	23.03.95	21.12.95	20.09.95
Lithuania	24.03.95	22.12.95	-
Luxembourg	09.05.94	07.02.95	-
Netherlands	20.12.93	21.09.94	20.09.94

* Countries that have not yet ratified the Convention.
** Belgium becomes a Party on 15 April 1996.

TABLE 1. (continued)

Annex I Parties	Date of ratification	Communication due	Communication received
New Zealand	16.09.93	21.09.94	21.09.94
Norway	09.07.93	21.09.94	21.09.94
Poland	28.07.94	26.04.95	02.02.95
Portugal	21.12.93	21.09.94	25.01.95
Romania	08.06.94	06.03.95	14.03.95
Russian Federation	28.12.94	28.09.95	05.12.95
Slovak Republic	25.08.94	24.05.95	11.10.95
Spain	21.12.93	21.09.94	28.09.94
Sweden	23.06.93	21.09.94	20.09.94
Switzerland	10.12.93	21.09.94	21.09.94
Turkey*	-	-	-
Ukraine*	-	-	-
United Kingdom	08.12.93	21.09.94	07.02.94
United States of America	15.10.92	21.09.94	21.09.94
Liechtenstein★	22.06.94	22.03.95	24.02.95
Monaco ★	24.11.92	21.09.94	25.10.94

* Countries that have not yet ratified the Convention.

★ As stipulated in Article 4.2(g) of the Convention, any Party not included in Annex I may, in its instrument of ratification, acceptance, approval or accession, or at any time thereafter, notify the Depositary that it intends to be bound by subparagraphs (a) and (b) of Article 4.2. Monaco notified the Depositary of its intention to be bound by these subparagraphs on 24 November 1992. Liechtenstein has not notified the Depositary of its intention to be bound by these subparagraphs.

TABLE 2. IN-DEPTH REVIEWS OF NATIONAL COMMUNICATIONS FROM ANNEX I PARTIES UNDERTAKEN UP TO 5 FEBRUARY 1996

Country visit	Origin of experts nominated by Governments			Experts from
	Developing countries	Economies in transition	Annex II Parties	IGOs*
Sweden (13-17 March 1995)	Brazil	Bulgaria	United States of America	-
Czech Republic (2-5 May 1995)	Kenya	Poland	-	-
United States of America (22-26 May 1995)	Philippines	Russian Federation	Sweden	IEA
Canada (29 May-2 June 1995)	Mexico	Czech Republic	Japan	OECD
Australia (26 June-30 June 1995)	Egypt	Slovak Republic	United Kingdom	IEA
New Zealand (3-7 July 1995)	Sri Lanka	Slovak Republic	United Kingdom	-
Japan (3-7 July 1995)	Bangladesh Republic of Korea	-	United States of America	IEA
Denmark (14-18 August 1995)	China	Hungary	Italy	OECD
Switzerland (11-14 September 1995)	Mexico	-	France	-

TABLE 2. (continued)

Country visit	Origin of experts nominated by Governments			Experts from
	Developing countries	Economies in transition	Annex II Parties	IGOs*
Spain (25-29 September 1995)	Cuba Mexico	-	Portugal	-
United Kingdom (9-13 October 1995)	Brazil	Slovak Republic	Switzerland	OECD
Norway (23-27 October 1995)	Ecuador	Bulgaria	Australia	OECD
Germany (20-24 November 1995)	China	Latvia	Japan	OECD
Netherlands (20-24 November 1995)	India	Russian Federation	Canada	IEA
Austria (4-7 December 1995)	Ghana★	-	Netherlands	IEA
Ireland (29 Jan. - 2 February 1996)	Kenya	Bulgaria	Norway	-
Finland (29 Jan. - 2 February 1996)	Thailand	Russian Federation	United Kingdom	-

The teams include a coordinator from the secretariat, who may be assisted by a colleague or a consultant.

* **IGO**: Intergovernmental organization.
OECD: Organisation for Economic Co-operation and Development.
IEA: International Energy Agency.

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NATIONAL COMMUNICATIONS

COMMUNICATIONS FROM PARTIES NOT INCLUDED IN ANNEX I TO THE CONVENTION

Issues related to the preparation, compilation and consideration of communications

Note by the secretariat

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Annex

Elements that could be considered in the guidelines for preparation of communications from Parties not included in Annex I to the Convention 10

I. INTRODUCTION

A. Mandate

1. At its first session, the Conference of the Parties (COP), by its decision 8/CP.1* relating to first communications from Parties not included in Annex I to the Convention, requested the subsidiary bodies to develop, for consideration by the Conference of the Parties at its second session (COP 2), recommendations on guidelines for the preparation of national communications from non-Annex I Parties and proposals for the process to consider these communications, in accordance with Article 10 of the Convention.

2. At the same session the COP also adopted decision 6/CP.1 relating to the respective roles of, and relationship between, the Subsidiary Body for Scientific and Technological Advice (SBSTA) and the Subsidiary Body for Implementation (SBI), including with respect to the communication of information. The programme of work of these bodies, as discussed in their first sessions, allocates responsibility for taking the lead to the SBSTA with regard to recommendations on guidelines for the communications and to the SBI with regard to the process for considering the communications (FCCC/SBSTA/1995/2, paras. 23-27; FCCC/SBI/1995/2, paras. 9-13; FCCC/SB/1995/INF.1, para. 2).

3. The SBSTA, at its first session, requested the secretariat to prepare, for consideration by the SBSTA at its second session, recommendations on guidelines for the preparation of national communications from Parties not included in Annex I to the Convention, taking into account the views expressed by the Parties and the papers submitted by the Parties, including document A/AC.237/MISC.40. The SBSTA further requested the secretariat to facilitate the exchange and sharing of information among Parties for the preparation of initial communications, including forums in which discussions of technical and common aspects of such communications could be undertaken, and to seek extra budgetary funds for that purpose (FCCC/SBSTA/1995/3, para. 35 (a) and (b)).

4. The Ad Hoc Group on the Berlin Mandate (AGBM), at its second session, noted the readiness of Parties not included in Annex I to the Convention to advance the preparation of their initial communications, taking into account Article 4.3, 4.5, and 4.7 of the Convention and paragraph 2 (b) of decision 1/CP.1 (the Berlin Mandate), in order to supplement their sustainable development. It was agreed that a workshop should be organized by the Chairs of the AGBM, the SBSTA, and the Group of 77 and China, with the assistance of the secretariat, to exchange experiences on the methodologies for, and preparation of, the initial communications (FCCC/AGBM/1995/7, paras. 42 and 44).

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* For decisions adopted by the Conference of the Parties at its first session, see document FCCC/CP/1995/7/Add.1.

B. Scope of the note

5. This note proposes elements to assist the subsidiary bodies in deciding on the possible guidelines for the content of the communications from Parties not included in Annex I. It also makes proposals to facilitate the preparation of these communications.

6. Since COP 2 is to receive proposals from the subsidiary bodies for the process to consider these communications, this note also makes some observations on this matter in order to assist the subsidiary bodies in developing their approach in time.

7. The note has been developed on the basis of the text of the Convention, relevant intergovernmental decisions, the views submitted by Parties and the Group of 77 and China, as well as experiences of Parties in the preparation of their communications.

8. The note deals with issues to be considered by the SBSTA (see section III); issues to be considered by the SBI (see section IV); and raises issues for consideration by both bodies (see section V). The annex includes a set of elements that could be considered in any decision on the guidelines for the preparation of communications from Parties not included in Annex I.

9. In accordance with Article 12.1, the note refers to the communication of information from Parties not included in Annex I to the Convention, or "non-Annex I Parties". The secretariat assumes that the term "first" communication, referred to in decision 8/CP.1, has the same meaning as "initial" communication, referred to in Article 12.5. Where this note refers to "communications" and "guidelines", these refer to communications from Parties not included in Annex I and to guidelines for their preparation, unless it is stated otherwise.

C. Possible action by the subsidiary bodies

10. According to Article 12.5, communications from Parties not included in Annex I will become due as from March 1997, on account of the entry into force of the Convention for these Parties. On this basis, 46 such communications are due in 1997 and 27 are due in 1998. Parties that are least developed countries may make their communications at their discretion. By the end of 1995, the Convention had entered into force for 34 such Parties; up to 34 further communications may thus be forthcoming in 1997 and 1998. The process would be facilitated by the early availability of guidelines for the preparation of the communications.

11. In view of the need to take timely action, and on the basis of their mandates and work plans, each subsidiary body may aim to advance its work on the preparation of communications from Parties not included in Annex I, taking account of the relevant parts of this document and of other information, in particular the results of the workshop convened by the Group of 77 and China, scheduled to be held on 26 February 1996.

12. The SBSTA may aim at adopting conclusions and/or recommendations to the COP that would address the guidelines for the content of the communications from Parties not included in Annex I.

13. The SBI may likewise aim at adopting conclusions and/or recommendations to the COP that would address the facilitation of the preparation of the communications by Parties not included in Annex I.

14. Both the subsidiary bodies may also discuss how to approach the process for consideration of the communications, as requested by the COP, and to seek the views of Parties on this matter.

II. BACKGROUND

A. Convention provisions

15. A number of articles provide the substantive and procedural framework for the compilation, communication and consideration of information. Article 12.1 provides that each Party shall communicate to the COP, through the secretariat, elements of information related to implementation. Article 4.1 contains the general commitments of Parties, including those related to the communication of information to the COP. Article 10.2(a) provides that the SBI shall consider the information communicated in accordance with Article 12.1, to assess the overall aggregated effect of the steps taken by all Parties in the light of the latest scientific assessments concerning climate change. Article 9.2 provides that the SBSTA shall provide assessments of the state of scientific knowledge relating to climate change and its effects, prepare scientific assessments on the effects of measures taken in the implementation of the Convention and provide advice on promoting development and/or transferring technologies and supporting endogenous capacity-building.

16. Article 12.4 provides that projects for financing could be included in the communications. Article 12.5 provides a time-frame for the initial communications. Article 12.6 requires the secretariat to transmit as soon as possible the information communicated to the COP and the subsidiary bodies. Article 12.7 provides for provision of technical and financial support in compiling and communicating information. According to Article 8.2(c) the secretariat is to facilitate such assistance, on request. The agreed full costs incurred by developing country Parties on the communications are to be met, in accordance with Article 4.3.

17. The COP is required by Article 7.2(e) to assess, on the basis of all information made available to it, the implementation of the Convention by all Parties, the overall effects of the measures taken and the extent to which progress towards the objective of the Convention is being achieved.

B. Other relevant decisions

18. It may be recalled that the Intergovernmental Negotiating Committee, at its eighth session, agreed that decisions taken with regard to communications by Annex I Parties would, to some extent, also be relevant to the communications of developing country Parties due at a later stage (A/AC.237/41, para. 66). The possibility was discussed of developing country Parties setting up units, if they so desire, supported by the financial mechanism, to serve as contact points for implementation of the activities under the Convention. The value of informal consultations among Parties on matters related to communication of information was recognized. The task of compiling and synthesizing information contained in national communications was considered important for the purpose of assessing the overall effect of the measures.

19. The Intergovernmental Negotiating Committee, at its ninth session, concluded that a first step, related to communication of information referred to in Article 12.1, would be the elaboration of the format and content of such communication and the identification of the needs of developing country Parties with respect to capacity-building activities to enable them to fulfil their obligations under Article 12.1. In this connection, the Committee took note of the intention of the Group of 77 and China to convene a meeting of experts from developing countries (A/AC.237/55, para. 82).

20. The COP has adopted decisions related to communication of information from Parties not included in Annex I (decision 8/CP.1) and the respective roles of the subsidiary bodies with respect to the information communicated (decision 6/CP.1). As stated above, the SBSTA has requested the secretariat to prepare recommendations on guidelines for the preparation of the communications (FCCC/SBSTA/1995/3).

C. Views submitted by Parties

21. The COP, by its decision 8/CP.1, invited Parties to submit views on guidelines to be developed for the preparation of the communications from Parties not included in Annex I as well as on the process to consider these communications. Views have been submitted by the Group of 77 and China (A/AC.237/MISC. 40), the United Kingdom (FCCC/SB/1995/MISC.1) and Brazil (FCCC/SB/1996/MISC.1). These views focus on the preparation of the communications.

D. Other inputs

22. The subsidiary bodies may wish to consider as appropriate any relevant conclusions of the workshop of Parties not included in Annex I, scheduled to be held on 26 February 1996. The objective of the workshop is to exchange experiences on the methodologies for, and preparation of, the communications, and a report on its conclusions will be presented to the SBSTA. The subsidiary bodies may also wish to take into account the experience of Parties

included in Annex I in the preparation of their communications as well as other relevant experience from Parties.

23. The SBI may wish to take into consideration the paper on the "Enabling activities for the preparation of the first national communication in climate change: operational criteria", prepared by the secretariat of the Global Environment Facility (GEF) in October 1995. The document provides that the criteria will be revised once guidelines for communications from Parties not included in Annex I have been adopted by the COP.

III. GUIDELINES FOR THE CONTENT OF COMMUNICATIONS

24. In response to the above-mentioned request by the SBSTA, the secretariat has elaborated a number of elements that may be included in such guidelines. These are contained in the annex to this document.

25. The indicated elements would serve to establish consistency, transparency, and comparability of information, as well as flexibility to accommodate the diversity of national situations. The communications could be based on available relevant information and describe the further action being taken, or needing to be taken, at the national level, with regard to the compilation of information.

26. The SBSTA may consider these elements in developing guidelines for adoption by the COP. It may wish to recommend that, in the interim, Parties not included in Annex I refer to these elements in the preparation of their communications. It may also recommend that those Parties not included in Annex I who wish to submit voluntarily additional information may use elements from the guidelines approved for Parties included in Annex I when preparing their communications.

27. In order to enable the COP to consider the national development priorities, objectives, and circumstances of the Parties not included in Annex I, in accordance with Article 4.1, and the provisions of Article 4.3, 4.5, and 4.7, the SBSTA may wish to recommend that such Parties provide relevant information in their communications.

IV. FACILITATION OF PREPARATION OF COMMUNICATIONS

28. The short time available to Parties not included in Annex I for the preparation of their communications, and their differentiated capacities, justify facilitative activities to support the process. Some such activities are proposed for the consideration of the SBI:

(a) The nomination of national focal points would facilitate the preparation of the communications;

(b) The organization of cooperative activities to share experiences, provide relevant information, and identify "best practices" would improve capabilities for the preparation of the communications. Thematic workshops, with technical inputs from regional institutions and other experts, can be a cost-effective way to deal with practical issues arising during the preparation of the communications. It may be recalled that the value of informal consultations among Parties on matters relating to communication of information has been recognized by all Parties (see A/AC.237/41, para. 66) and the SBSTA has requested the secretariat to facilitate the exchange and sharing of information among Parties, including forums in which discussions of technical and common aspects of such communication could be undertaken (FCCC/SBSTA/1995/3, para. 35 (b));

(c) The early preparation and submission of project proposals for seeking financial and technical support for the preparation of these communications from the GEF (as the interim operating entity of the financial mechanism of the Convention), other Parties or competent international organizations, and the timely approval of these projects, would help the process.

29. These elements would link capabilities, requirements for support, and the time schedule for the communications provided in the Convention. Forums, workshops and training, as well as sharing of information, would also build capacity in the least developed countries to enable them to submit their initial communications in a similar time frame as other Parties not included in Annex I. The availability of all communications within an agreed time-frame, and comparability of information, is important for consideration of the communications. In this context, the secretariat could continue to facilitate the provision of financial and technical support. A progress report on the secretariat's activities is given in document FCCC/SBI/1996/4. These activities will need to evolve to meet the emerging needs of the Parties not included in Annex I.

V. DEVELOPING AN APPROACH TO CONSIDERATION OF COMMUNICATIONS

30. The COP has requested the subsidiary bodies to develop, for consideration at COP 2, proposals for the process to consider the information communicated by Parties not included in Annex I. Such a process would have to deal with scientific and technical aspects, to be considered by the SBSTA, as well as policy aspects, to be dealt with by the SBI. The process may be assisted by the secretariat preparing a compilation and synthesis of the information communicated, if requested by the subsidiary bodies.

31. Parties have not submitted views on the process for consideration of the communications. In this context, assuming that the subsidiary bodies would only have an initial exchange of views, this item would have to be taken up at their third sessions, in order to meet the deadline set by the COP.

32. In order to prepare for further discussions, the subsidiary bodies may wish to request the secretariat to provide a compilation of any views on the process for consideration of the communications from Parties not included in Annex I, which may have been transmitted by the Parties to the secretariat by 15 April 1996. The subsidiary bodies may wish to further request the secretariat to prepare a note for their third sessions on the process for consideration of the communications from Parties not included in Annex I, including budgetary considerations, on the basis of discussions in the subsidiary bodies and any views submitted by Parties.

Annex

ELEMENTS THAT COULD BE CONSIDERED IN THE GUIDELINES FOR THE PREPARATION OF COMMUNICATIONS FROM PARTIES NOT INCLUDED IN ANNEX I TO THE CONVENTION

1. The guidelines for the preparation of communications by Parties not included in Annex I would have four principal purposes:

(a) To assist Parties not included in Annex I in meeting their commitments under Articles 4.1 and 12.1

(b) To facilitate the process of preparation, compilation and consideration of the communications

(c) To encourage the presentation of information in ways that are consistent, transparent, and comparable as well as flexible, to take into account specific national situations and requirements for support

(d) To ensure that the Conference of the Parties has sufficient information to carry out its responsibilities to assess the overall aggregated effects of the steps taken by the Parties in the light of the latest scientific assessments concerning climate change, and of the implementation of the Convention

Scope

2. In accordance with Article 12.1(a), (b) and (c), and Article 4.1(j), the communication should include:

(a) A national inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol on Substances that Deplete the Ozone Layer, to the extent the capacity of the Party permits, using comparable methodologies

(b) A general description of steps taken or envisaged by the Party to implement the Convention

(c) Any other information that the Party considers relevant to the achievement of the objective of the Convention and suitable for inclusion in its communication, including, if feasible, material relevant for calculations of global emission trends

Inventory

3. Article 12.1(a) provides that the communication should include a national inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol. Information should be provided on carbon dioxide (CO_2) and, to the extent the Parties' capacities permit, on methane (CH_4) and nitrous oxide (N_2O). Parties may provide information on ozone (O_3) precursors, carbon monoxide (CO), nitrogen oxides (NO_x) and volatile organic compounds (VOCs), as well as on other greenhouse gases, including, inter alia, perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), and sulphur hexafluoride (SF_6).

4. The Intergovernmental Panel on Climate Change (IPCC) Guidelines for National Greenhouse Gas Inventories should be used in estimating, reporting, and verifying inventory data. The simplest default calculations of emissions of carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_20) recommended in the Guidelines are available as a minimum, but Parties are encouraged to use the fuller methodology. Parties that already have an established and comparable methodology, emission factors or activity data could use that data, provided that they include sufficient documentation to back up the data presented. Where nationally generated data is used, the level of uncertainty associated with default emission factors, activity data and underlying assumptions adopted should be discussed qualitatively and, where possible, quantitatively.

5. Quantitative data related to inventories of greenhouse gas emissions and removals should be presented on a gas-by-gas basis with emissions by sources listed separately from removals by sinks, except in cases where it is technically impossible to separate information on sources and sinks. In addition, Parties may choose to use global warming potentials (GWPs) to reflect their inventories in carbon dioxide-equivalent terms. Parties may also choose to use the analytical approach related to adaptation and the information provided by the IPCC in its 1994 Special Report as well as the analytical approach related to assessment of mitigation options using information provided by the IPCC in its 1995 Second Assessment Report.

6. The year 1990 should be the base year for inventories.

7. If, in addition, Parties wish to present their inventory data in other forms, inter alia, greenhouse gas emissions per capita, this information could be provided in a section of the communication dealing with national circumstances. If possible, it would also be desirable to include some information on historical trends so as to put the inventory information in context.

General description of steps

8. Article 12.1 requires Parties not included in Annex I to provide a general description of steps taken or envisaged by the Party to implement the Convention. These steps could be

related to the achievement of sustainable development and need not have as a primary objective the limitation of greenhouse gas emissions. Parties may provide, to the extent possible, an assessment of the effect of the steps taken.

9. The communication may include information on national and, where appropriate, regional programmes containing measures to mitigate and facilitate adequate adaptation to climate change (Article 4.1(b)).

10. The communication may also include information on steps to promote the following (including requirements for support):

(a) The development, application and diffusion, including transfer, of technologies, practices and processes that control, reduce or prevent anthropogenic emissions in all relevant sectors, including the energy, transport, industry, agriculture, forestry and waste management sectors (Article 4.1(c))

(b) The conservation and enhancement, as appropriate, of sinks and reservoirs of all greenhouse gases, including biomass, forests and oceans (Article 4.1(d))

(c) Improving endogenous capacities and capabilities to participate in scientific, technological, technical, socio-economic international and intergovernmental programmes and networks relating to research and systematic observation and development of data archives, intended to further the understanding and to reduce uncertainties regarding the causes, effects, magnitude and timing of climate change and the economic and social consequences of various response strategies, including the full, open and prompt exchange of relevant information (Article 4.1(g) and (h))

(d) Education, training of experts, and public awareness, including encouraging the widest participation in the preparation of the national communication (Article 4.1(i))

11. The communication may also provide information on needs for cooperation in preparing for adaptation to the impacts of climate change, development and elaboration of integrated plans for coastal zone management, water resources, and agriculture, and for the protection and rehabilitation of areas, particularly in Africa, affected by drought and desertification, as well as floods (Article 4.1(e)).

12. The description of the steps could be structured along the following sectors, as appropriate:

- Energy and transformation industries
- Transport
- Industry (energy-related)
- Industry (non-energy)
- Residential and commercial

- Agriculture
- Land use change and forestry
- Coastal zone management
- Waste management
- Cross-sectoral

Any other information

13. Article 12.1(c) provides that the communication should include any other information that the Party considers relevant to the achievement of the objectives of the Convention and suitable for inclusion in its communication, including, if feasible, material relevant for calculations of global emission trends.

14. Article 4 of the Convention includes paragraphs related to financial resources and transfer of technology, and which also relate to the preparation of communications from Parties not included in Annex I. The provisions of Article 4.3, 4.4, 4.5, 4.7, 4.8, and 4.9 are relevant in this context.

15. Article 4.10 provides for consideration of the situation of Parties with economies that are vulnerable to the adverse effects of the implementation of measures to respond to climate change. If Parties not included in Annex I seek such consideration, they should state clearly the special consideration they are seeking and provide an adequate explanation when submitting their communications.

16. The communications may also identify the technical and financial needs associated with proposed projects and response measures under Article 4, so that the COP can arrange for the provision of financial and technical support, in accordance with Article 12.7.

17. According to Article 12.4, developing country Parties may propose projects for financing, including specific technologies, materials, equipment, techniques or practices that would be needed to implement such projects, along with, if possible, an estimate of all incremental costs of the reductions of emissions and increments of removals of greenhouse gases, as well as an estimate of the consequent benefits.

National circumstances

18. A Party may wish to provide other information relevant to its situation. Relevant information could include the following:

(a) Population profile (for example, growth rates, population density and distribution, with some historical perspective and greenhouse gas emissions per capita)

(b) Geographic profile (for example, ecozones, land area and land use, including changes)

(c) Climatic profile (for example, data on heating and cooling degree days and rainfall and impacts of climate change)

(d) Economic profile (for example, gross domestic product (GDP), GDP per capita, GDP growth rates, GDP by sector, levels of poverty, and imports and exports, with some historical perspective and greenhouse gas emissions per GDP)

(e) Energy profile (for example, energy supply and consumption (by sector, fuel type, per capita, per unit of GDP), energy intensity and energy pricing for commercial and non-commercial consumers (including taxes), with some historical perspective)

(f) Social profile (for example, information such as percentage of population dependent on agriculture, average dwelling size, number of vehicles per capita and per family unit, and personal and freight traffic (billions km/person) by type (air, rail, road, and public/private), livestock population and standard livestock units per unit area)

Structure and executive summary

19. The information provided in accordance with these guidelines should be communicated by a Party to the COP in a single document. Any additional or supporting information may be supplied through other documents such as a technical annex.

20. A communication should include an executive summary that would present the key information and data from the full document. The executive summaries will be translated and distributed widely. In view of the limits on translation, it would be useful to envisage an executive summary of no more than five pages.

Language

21. The communications may be submitted in one of the official languages of the United Nations. Parties should, where relevant, also submit a translation of their communication into one of the working languages of the United Nations.

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